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DISTRICT COURT, CITY AND COUNTY OF DENVER, STATE OF COLORADO

Case No. 94 CV 5459 Courtroom 7

CONSENT DECREE AND ORDER

RECEIVED
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OFFICE OF THE
ATTORNEY GENERAL
NATURAL RESOURCES SECTION

SUNNYSIDE GOLD CORPORATION,

Plaintiff,

v.

COLORADO WATER QUALITY CONTROL DIVISION OF THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT,

Defendant.

RECITALS

WHEREAS, Sunnyside Gold Corporation ("SGC"), a subsidiary of Echo Bay Inc., is a corporation duly organized and existing under the laws of the State of Delaware and having its principal place of business in San Juan County, Colorado.

WHEREAS, the Colorado Water Quality Control Division ("Division") is an agency of the State of Colorado duly created pursuant to section 25-8-301 of the Colorado Revised Statutes (1988) as part of the Division of Administration, Colorado Department of Public Health and Environment. The Division's duties include the administration and enforcement of the water quality control program adopted pursuant to the Water Quality Control Act, C.R.S. § 25-8-101 (1989) ("Act").

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WHEREAS, SGC owns an inactive mining property in San Juan County, Colorado, near the City of Silverton, commonly referred to as the Sunnyside Mine ("Mine").

WHEREAS, SGC undertook mining operations at the Mine for approximately six years, from 1985 to 1991, although the Mine has operated under other owners for many decades.

WHEREAS, SGC holds two Colorado Discharge Permit System ("CDPS") permits authorizing the discharge of pollutants from the mine, in accordance with numeric effluent limits and other conditions. CDPS Permit No. CO-0027529 authorizes the discharge of Mine water through the Mine's main access portal, commonly referred to as the American Tunnel, to Cement Creek. SGC does not own all of the property drained by the American Tunnel. CDPS Permit No. CO-0036056 authorizes the discharge of Mine water through a secondary access portal, commonly referred to as the Terry Tunnel, to Eureka Gulch. SGC continues to be bound by the terms and conditions of its CDPS permits and continues to treat Mine water flows. Treatment includes creation of treatment residues which are periodically dredged and disposed of at SGC's existing tailings pond.

WHEREAS, SGC holds CDPS Permit No. CO-0000426, for the Mayflower Mill, which authorizes the discharge of pollutants from the Mayflower Mill tailings piles to the Animas River in accordance with numeric effluent limits and other conditions.

WHEREAS, SGC also holds the following CDPS stormwater permits:

(1) COR-040052 - American Tunnel Stormwater: authorizes discharges composed entirely of stormwater from the site to Cement Creek in accordance with the site Stormwater Management Plan ("SWMP").

(2) COR-040053 - Ross Basin-Brenneman Vein Project Stormwater: authorizes discharges composed entirely of stormwater from the site to Cement Creek in accordance with the site SWMP.

(3) COR-040054 - Mayflower Mill Stormwater: authorizes discharges composed entirely of stormwater from the site to the Animas River in accordance with the site SWMP.

(4) COR-040055 - Eureka Millsite Stormwater: authorizes discharges composed entirely of stormwater from the site to the Animas River in accordance with the site SWMP.

(5) COR-040056 - Midway Millsite Stormwater: authorizes discharges composed entirely of stormwater from the site to the South Fork of the Animas River in accordance with the site SWMP.

(6) COR-040057 - Ransom-White Star Tunnel Stormwater: authorizes discharges composed entirely of stormwater from the site to the South Fork of the Animas River in accordance with the site SWMP.

(7) COR-040058 - Terry Tunnel Stormwater: authorizes discharges composed entirely of stormwater from the site to Eureka Creek in accordance with the site SWMP.

(8) COR-040059 - Mayflower Mine Stormwater: authorizes discharges composed entirely of stormwater from the site to Arrastra Creek in accordance with the site SWMP.

(9) COR-040060 - Sunnyside Basin Stormwater: authorizes discharges composed entirely of stormwater from the site to Eureka Creek in accordance with the site SWMP.

(10) COR-040061 - Gold Prince Mine Stormwater: authorizes discharges composed entirely of stormwater from the site to Placer Gulch in accordance with the site SWMP.

(11) COR-040063 - Gold Prince Mill Stormwater: authorizes discharges composed entirely of stormwater from the site to the Animas River in accordance with the site SWMP.

WHEREAS, SGC also holds Mined Land Reclamation Permit No. M77-378 ("MLR Permit") pursuant to the Colorado Mined Land Reclamation Act, C.R.S. § 34-32-101 (1995) ("MLRA").

WHEREAS, Pursuant to the MLRA and MLR Permit, SGC has been in the process of final reclamation of the Mine, the Mayflower Mill, and the tailings impoundments at the Mayflower Mill for several years. The final reclamation plan (the "Reclamation Plan"), submitted by SGC to and approved by the Colorado Mined Land Reclamation Board, includes installation by SGC of a bulkhead at SGC's underground property line within the American Tunnel to prevent mine water from flowing directly out of the Mine workings through the American Tunnel portal to Cement Creek and installation by SGC of a bulkhead at the Terry Tunnel portal.

WHEREAS, the Division of Minerals and Geology ("DMG") recommended, and the Mined Land Reclamation Board approved, a technical revision to SGC's Reclamation Plan on November 18, 1993, specifying the details and conditions for the installation of the underground bulkheads.

WHEREAS, DMG's approval included in its rationale that indefinite or perpetual mine drainage treatment was not desirable for final reclamation and that hydraulic seals offer the best alternative for final mine site reclamation. The DMG approval rationale also stated that the physical setting of the Sunnyside Mine appeared to be ideal for a hydraulic sealing scheme.

WHEREAS, the Mined Land Reclamation Board's ("MLRB") approval of the technical revision specifically noted the disagreement between the WQCD and SGC regarding SGC's legal responsibility for CDPS permitting of seeps and springs after the sealing of the mine workings. The MLRB required that any measurable change in water quality or quantity in the seeps and springs of the drainages surrounding the Mine be monitored and reported to DMG and to the WQCD, required that SGC contact the WQCD in the event of any such measurable change to determine if a new or existing discharge permit for the Mine is necessary, and stated that responsibility for enforcement of potential discharge permit compliance problems would rest with the WQCD.

WHEREAS, since the American Tunnel was extended to the Sunnyside Mine workings in the 1950's, and today, most water in and nearby the mine area has flowed in part out of the ground through naturally occurring seeps and springs and has flowed in part through the Mine workings and American Tunnel to Cement Creek. Water has also historically drained through the Terry Tunnel to Eureka Gulch. Since at least 1985, flows from the American and Terry Tunnels have been treated at treatment plants prior to discharge in accordance with CDPS permits.

WHEREAS, installation of these bulkhead seals will impound water behind the bulkheads, eventually flooding the Mine, and at some time subsequent to initial Mine flooding, water, which is now discharged through the American Tunnel and Terry Tunnel portals pursuant to the CDPS Permits, may flow through underground fractures and fault systems which may form seeps and springs which discharge into surface waters.

WHEREAS, the Parties dispute whether or not the seeps and springs which may emerge or increase following installation of bulkhead seals in the American and Terry Tunnels would be subject to the permit requirements of the Act. The Division's position is that any such seeps or springs could be enforceable against SGC as violations of the Act as the discharge of pollutants to state waters from a point source without a permit. SGC's position is that any such seeps and springs would not be subject to the permit requirements of the Act because they would not constitute the discharge of pollutants by SGC from a point source.

WHEREAS, SGC filed a Complaint for Declaratory Relief in this case against the Division requesting that the Court determine the applicability of the permit requirements of the Act so that final reclamation could proceed.

WHEREAS, the Parties desire that reclamation of the Mine proceed to completion.

WHEREAS, SGC desires termination of CDPS Permits No. CO-0027529 and CO-0036056.

WHEREAS, to resolve this dispute, to allow SGC to proceed with final reclamation of the Sunnyside Mine, to provide for closure of the American and Terry Tunnels by hydraulic seals, to provide for mitigation of certain other historic mining conditions, to protect the

waters of the State of Colorado, and to provide for the final termination of CDPS Permits No. CO-0027529 and CO-0036056, the parties agree to the terms and conditions of this Consent Decree. For purposes of settlement, they do so without trial of any facts or legal issues. Except as set forth in this Consent Decree, the parties neither admit nor deny any factual allegations related to the closure of the American and Terry Tunnels; nor do the parties concede any disputed legal issues which have been or could have been raised in this litigation.

WHEREAS, the Parties agree that the terms, conditions, and undertakings herein will create mutual contractual rights and obligations between the Parties.

WHEREAS, the Parties consent and agree to the entry by this Court of this Consent Decree and Order.

NOW THEREFORE IT IS HEREBY ORDERED, ADJUDGED AND DECREED AS FOLLOWS:

I. JURISDICTION

1. This Court has jurisdiction over the Parties and the subject matter of this action and decree.

II. PARTIES BOUND AND FINDINGS

2. Upon entry, this Consent Decree will apply to and be binding upon each of the Parties, and upon any successors in interest and assigns. The undersigned representatives of the respective Parties certify that they are fully authorized by the Party whom they represent to

enter into the terms and conditions of this Consent Decree, to execute this Consent Decree, and to legally bind that Party to the terms and conditions of this Consent Decree.

3. The Parties agree, and the Court finds, that the settlement embodied in this Consent Decree is lawful under the Act, is consistent with the purposes of the Act, and is intended to protect the waters of the State of Colorado.

III. DEFINITIONS

4. Words used in this Consent Decree that are defined in the Colorado Water Quality Control Act, C.R.S. § 25-8-101 ("Act") or regulations promulgated pursuant to the Act ("regulations") are defined, for purposes of this Consent Decree, as defined in the Act and regulations. Other words used in this Consent Decree are to be taken and understood in their ordinary sense unless this Consent Decree indicates that a different meaning was intended. Whenever the following terms are used in this Consent Decree, together with all documents appended hereto, the following meanings apply:

a. "Consent Decree" means this document when entered by the Court and in effect, all appendices attached hereto, and any future amendments hereto.

b. "Division" means the Water Quality Control Division of the Colorado Department of Public Health and Environment.

c. "DMG" means the Division of Minerals and Geology of the Colorado Department of Natural Resources.

d. "Field Season" means any annual construction season so long as the Consent Decree has been entered by the Court prior to June 1 of that calendar year.

e. "Parties" collectively means the Water Quality Control Division of the Colorado Department of Public Health and Environment and Sunnyside Gold Corporation. "Party" means either of the Parties.

f. "Mitigation Project Site" means any one of the locations for the mitigation projects described in Appendix B, which includes "A" list and "B" list projects and any additional mitigation projects agreed to by the Parties pursuant to this Consent Decree.

g. "Reclamation Standards" for purposes of the mitigation projects, means sections 3.1.5 (materials handling), 3.1.9 (top soiling), 3.1.10 (revegetation), and 3.1.11 (buildings and structures) of the rules of the Mined Land Reclamation Board, 2 CCR 407-1 as they exist at the time this Consent Decree is entered by the Court.

h. "Reference Point" means the water quality monitoring station A-72 located on the Animas River, below its confluence with Mineral Creek, below Silverton, Colorado. It is also known as USGS Gage Site No. 09359020 and as the Water Quality Control Division's River Pollution System ("RPS") No. 82. The function of the Reference Point under this Consent Decree is described in paragraph 14 and in Appendix A attached hereto.

i. "Reference Water Quality" is defined as it is in Appendix A.

j. "SGC" means Sunnyside Gold Corporation.

k. "Work" means all remedial, mitigative, corrective, and other actions, schedules, plans, terms, and conditions prescribed by or described in this Consent Decree, documents appended hereto, and any future amendments hereto.

l. "Work Plan" means any one of the plans for remedial or mitigative work, either attached to the permit for mitigation projects which is attached as Appendix C to this Consent Decree, or submitted by SGC to the Division for approval pursuant to this Consent Decree.

m. "WQCD" means the Water Quality Control Division of the Colorado Department of Public Health and Environment.

IV. COMMITMENTS OF THE PARTIES

5. Performance and Financing of the Work. SGC will perform, or cause to be performed, the Work agreed to in this Consent Decree. SGC may undertake any portion of the Work through qualified consultants or contractors designated by SGC, provided that no such designation will relieve SGC of any of its obligations under this Consent Decree. SGC will timely finance the Work. SGC will complete the Work in accordance with the Reclamation Standards of the Colorado Division of Minerals and Geology ("DMG") and the Work Plans.

a. SGC will reimburse to the State of Colorado the actual costs for time spent for inspection of the Work performed pursuant to the Consent Decree at a rate of $33.33 per hour, and associated expenses, up to a maximum of $3,100 per mitigation project. SGC

will pay the amounts billed to it within thirty (30) days of receipt of those bills, as directed by the Division.

6. Maintaining Water Quality. SGC will carry out the Work required under this Consent Decree in a manner which is intended to maintain water quality in the Animas River at the Reference Point, as set forth in Appendix A hereto. SGC will monitor water quality at the Reference Point as required in paragraph 10 and statistically compare analytical results to the Reference Water Quality using the methodology set forth in Appendix A. SGC will respond to a statistically identified deterioration in water quality at the Reference Point as set forth in Appendix A. The Reference Point will not be a permit compliance point.

7. Monitoring and Completion. SGC will perform the monitoring described in paragraph 10, and, unless this Consent Decree is prematurely terminated, will certify that it has fulfilled the criteria for completion set forth in paragraph 14.

8. State Oversight and Obligations. The Division will at any time have the right to inspect any Work required of SGC under this Consent Decree and, upon request by SGC, the Division will request that DMG inspect any of the mitigation projects to determine whether the reclamation Work has been completed in accordance with the Reclamation Standards of DMG and the Work Plans.

a. Within thirty days of receipt by the Division of certification by SGC that it has completed a mitigation project or projects, the Division will request that the Work be inspected. Within thirty days after the Work has been inspected and a report provided to the Division, the Division will in writing either confirm that SGC has completed that mitigation

project or projects according to the approved Work Plans and the Reclamation Standards of the Division of Minerals and Geology or provide to SGC a written statement of the reasons why the Division believes that SGC has not done so. If the Division requests that DMG perform the inspections and DMG declines to do so, the Division will perform the inspections.

b. Within sixty days of a request by SGC, the Division will complete a Permit Termination Assessment pursuant to Section VIII of this Consent Decree.

c. Within sixty days after a Division determination of a Successful Permit Termination Assessment pursuant to Section VIII, the Division will, in accordance with then-existing procedures, commence termination of CDPS Permits No. CO-0027529 and CO-0036056 and any obligations of SGC thereunder and will complete termination in a reasonable time as permitted by its procedures. If not already accomplished, the Division will terminate the mitigation projects permit or permits and SGC will have no future obligations thereunder. The Division agrees, based on the facts of this case, that after a Successful Permit Termination Assessment and termination of these permits, no future CDPS point source permit will be required of SGC or its parent company for seeps or springs which emerge or increase in the Upper Animas River or Cement Creek drainages following installation and closure of bulkhead seals in the American or Terry Tunnels.

d. The Division will terminate CDPS stormwater permit COR-040061 (Gold Prince Mine) and that portion of CDPS stormwater permit COR-040052 (American Tunnel) covered by a mitigation project when the mitigation projects for those sites are confirmed by the Division to be completed pursuant to paragraph 8a. Termination of other

SGC stormwater permits will be governed by applicable regulations and not by this Consent Decree.

V. SUMMARY OF WORK

9. SGC, in consideration of the mutual undertakings set forth in this Consent Decree, agrees to perform the following Work:

a. American Tunnel/Terry Tunnel

During 1996, SGC will complete the seals permitted in the MLR Permit, and will close the valves at the Terry Tunnel and at the property line in the American Tunnel. Once the valves are closed, it is predicted that the mine pool will start to build and will eventually reach physical equilibrium. SGC will monitor the mine pool height. The mine pool will be considered to be at physical equilibrium when the rate of rise of the mine pool has leveled off, as defined by mutual agreement between SGC and DMG pursuant to the MLR Permit. Notice that equilibrium has been reached, as determined under the MLR Permit, will be provided by SGC to the Division within thirty days of such determination. Once the pool is at equilibrium, and after the two-year observation period required by the MLR permit, SGC will grout the valves and pipes in the bulkhead seals in the American and Terry Tunnels and place additional hydraulic seals downstream of the property line seal to eliminate the American Tunnel portal discharge and to allow final reclamation of the surface facilities as required by SGC's MLR Permit. Additional DMG approvals will be necessary for such further seals. SGC may also place infiltration controls to preclude water from entering the American Tunnel.

Should maintenance of the portion of the American Tunnel downstream of the SGC property line seal and treatment of the American Tunnel discharge be undertaken by the property owner or other parties, then SGC will be released from any continued CDPS permit obligation at the American Tunnel.

b. Mitigation Projects

SGC will undertake and timely complete mitigation projects as set forth in Appendix B. It is anticipated that completion of these projects will allow for final termination of CDPS Permits No. CO-0027529 and CO-0036056 while maintaining the Reference Water Quality in the Upper Animas Basin. SGC will complete all of the "A" List projects. Unless this Consent Decree is prematurely terminated pursuant to Section IX, SGC also will complete as many of the "B" List projects and additional mitigation projects as are necessary for achievement of permit termination pursuant to paragraph 14. SGC will have fulfilled its obligations with respect to each mitigation project when such project has been confirmed by the Division to be complete pursuant to paragraph 8a irrespective of subsequent water quality changes following such confirmation. Work Plans for each of the mitigation projects on the "A" and "B" lists are included in Appendix C and are hereby approved by the Division.

c. Cement Creek/Treatment Facility

To ensure against near-term adverse impacts on the Animas River from plugging of, and cessation of water treatment at, the American Tunnel, SGC will create a temporary water quality treatment "cushion" within the Upper Animas system to offset potential additional pollutant loading. During implementation of the mitigation projects, SGC

will divert stream flow from the mainstem of Cement Creek (including the North Fork of Cement Creek) to the current water treatment system for treatment. Upon valve closure at the Terry Tunnel and at the property line in the American Tunnel, SGC will adjust the American Tunnel treatment facility as necessary to accommodate the remaining flow from the lower American Tunnel and the diverted flow from Cement Creek. This stream diversion will be regulated in volume from essentially all stream flow in low-flow months up to the equivalent stream flow lost to the treatment system due to mine sealing during high flow. This diversion will be monitored and controlled to manage impacts at the Reference Point. Following completion of all mitigation projects on the A list, SGC may reduce or eliminate the treatment of Cement Creek at the American Tunnel treatment plant. SGC will notify the Division ten business days prior to substantially reducing the quantity of flows being treated relative to the treatment plant capacity. In its notice to the Division, SGC will provide its analysis that water quality will be maintained at the reference point (A72) with the decreased treatment of Cement Creek flows, and the amount that it intends to reduce these flows. The water treatment facility will remain in operational condition until a Successful Permit Termination Assessment pursuant to paragraph 14. Upon permit termination, the facility will be dismantled and the treatment ponds and surface disturbances reclaimed in accordance with SGC's DMG permit.

VI. MONITORING

10. Monitoring Requirements. As long as the Consent Decree is in effect, or unless otherwise agreed in writing between the parties, SGC will monitor the following sites

according to the frequencies below. Each of these sites will be monitored for the following parameters: dissolved zinc, dissolved iron, dissolved aluminum, dissolved manganese, dissolved cadmium, dissolved copper, sulfate, hardness and pH. Analysis of these parameters will be conducted using methods capable of detecting concentrations at or below the following: dissolved zinc: 10 ug/l; dissolved iron: 50 ug/l; dissolved aluminum: 50 ug/l; dissolved manganese: 50 ug/l; dissolved cadmium: 1.0 ug/l; dissolved copper: 5 ug/l; sulfate: 5 mg/l. The monitoring requirements of this Consent Decree are separate and in addition to any monitoring requirements of SGC's CDPS permits and MLR permit.

a. SGC Permitted Area

(i). American Tunnel Influent to Wastewater Treatment Facility - Sampled monthly until no flow exists or permits are terminated. Weekly flow measurements will be taken until no flow exists or permits are terminated.

(ii). Cement Creek Influent to Wastewater Treatment Facility - Sampled monthly while Cement Creek is diverted. Weekly flow measurements will be taken until the diversion stops.

(iii). American Tunnel Treatment Facility Effluent (CDPS Permit No. CO-0027529 Outfall 004A) - Sampled monthly.

(iv). Cement Creek below its confluence with the American Tunnel effluent (known as water quality monitoring station C-20) - Sampled monthly until Cement Creek diversion and treatment of American Tunnel waters ceases.

(v). Terry Tunnel Wastewater Treatment Facility Influent - If flow exists, inflow will be sampled monthly, when accessible, until no flow exists or permits are terminated. Weekly flow measurements will be taken when accessible until no flow exists or permits are terminated.

(vi). Terry Tunnel Wastewater Treatment Facility Effluent - If treatment is required due to flow from portal, effluent will be sampled, when accessible, monthly until no flow exists.

(vii). Monitoring required by SGC's MLR permit will continue until SGC is released from its obligations by DMG. Monitoring required by SGC's CDPS permits will continue until SGC is released from those permit obligations.

b. Mitigation Sites. The receiving stream, both upstream and downstream of, and any water flowing from, the mitigation project sites identified below, will be monitored starting in the first field season of work activity at such project, and ending two years after each project is confirmed by the Division to be completed pursuant to paragraph 8a, or, if a "B" List project, at the time of either a Successful Permit Release Assessment pursuant to paragraph 14 or a Premature Termination pursuant to Section IX. Four samples will be collected yearly with at least one at high flow and at least two at low flow.

(i). Koehler-Longfellow Portal and Mine Waste Dump.

(ii). Gold Prince Mine.

(iii). Columbus Mine.

(iv). London Mine.

c. Water quality at the three stream mouth locations identified below will be monitored by SGC every other month. Water quality monitoring at these sites will be done within 24 hours of a water quality monitoring event at the Reference Point. These three sites are currently monitored for stream flow by the USGS with funding provided by the Southwest Colorado Water Conservation District. If this USGS stream flow monitoring ceases for any reason, SGC will measure and record a stream flow measurement with each sampling event. In the event that the stream gage at any of the stream mouth locations is frozen or inoperable, flow may be estimated based on a suitable correlation with a reference gage.

(i). Water quality monitoring station A-68 on the Animas River above its confluence with Cement Creek, also known as USGS Gage Site No. 09358000.

(ii). Water quality monitoring station C-48 on Cement Creek above its confluence with the Animas River, also known as USGS Gage Site No. 093358550.

(iii). Water quality monitoring station M-34 on Mineral Creek above its confluence with the Animas River, also known as USGS Gage Site No. 09359010.

d. Water Quality Reference Point. Water quality at the Water Quality Reference Point will be sampled at the frequency set forth in Appendix A. If requested by the Division, SGC will give a one-day notice of a monitoring event and will split samples with a Division representative who may be present.

e. SGC will report results of the required monitoring to the Division by the 28th day of the month following SGC's receipt of those monitoring results. If SGC monitors any parameter more frequently than specified at the agreed locations within the basin using

approved test procedures, the results of that monitoring will also be reported to the Division.

VII. SCHEDULE

11. SGC will complete the seals in and close the valves at the Terry Tunnel and at the property line in the American Tunnel during the 1996 construction season. Treatment of Cement Creek and alkaline injection into the Mine pool (weather and conditions permitting) will begin concurrently with valve closure in the American Tunnel. The other mitigation projects will start within thirty days of valve closure in the American Tunnel and treatment of Cement Creek. Construction is confined to summer and fall months due to the heavy winter snowfalls that occur in the Upper Animas Basin.

The "A" List of primary projects will be substantially completed within the first two Field Seasons. Monitoring will begin concurrently with the commencement of Work by SGC under the Consent Decree. Upon completion of the "A" List projects, SGC will then implement as many of the "B" List projects, as needed. All "A" and "B" List projects required to maintain the Reference Water Quality will be completed in four Field Seasons. If additional mitigation projects are agreed to by the Parties pursuant to paragraph 13, a schedule for those projects will be agreed to by the Parties.

VIII. PERMIT TERMINATION ASSESSMENT

12. Permit Termination Assessment. At any time following completion of all of the mitigation projects on the "A" List, SGC may submit an application for a Permit

Termination Assessment, certifying that in its professional judgment all of the criteria of paragraph 14 have been fulfilled.

a. In the event that the Permit Termination Assessment criteria of paragraph 14 below are met, the Consent Decree Completion provisions of Section X will apply.

b. In the event that the Permit Termination Assessment criteria of paragraph 14 below are not met, the Division will specify in what respect the criteria have not been met. SGC will then determine whether to continue with this Consent Decree by identifying and undertaking additional mitigation projects on the "B" List of Appendix B, whether to undertake additional projects not on the "A" or "B" lists, or whether to proceed to premature Consent Decree termination pursuant to Section IX.

13. Additional Remediation Measures. In the event that the Permit Termination criteria of paragraph 14 below are not met following completion of all the mitigation projects on both the "A" and "B" Lists, within sixty days after the Division notifies SGC of such a determination, SGC will notify the Division whether or not it intends to propose additional remediation projects which are anticipated to have a positive impact on the water quality of the Animas River. If SGC determines that it will propose additional such projects, it will submit proposed Work Plans for such projects to the Division within sixty days of the notification or within a reasonable time frame based on the accessibility of the site for planning and the complexity of the project. These Work Plans will be in substantially the same form and will contain all of the types of information contained in the Work Plans approved by the Division

for the projects listed in Appendix B. Within sixty days of SGC's submittal of Work Plans, the Division will notify SGC whether it approves or disapproves such Work Plans, and if it disapproves, will state its reasons. The Division will not unreasonably withhold its approval. If additional projects are approved, a permit for such projects will be issued by the Division.

14. The Division will determine that there has been a Successful Permit Termination Assessment if all of the following criteria are met:

a. Five years have elapsed from the date of valve closure at the American Tunnel property line plug.

b. Two years have elapsed since notice of mine pool equilibrium has been given pursuant to Paragraph 9a.

c. Valves and pipes in the seals in the American and Terry Tunnels have been grouted.

d. Hydrologic controls and seals eliminating flows from the lower American Tunnel portal have been completed, or CDPS Permit No. CO-0027529, for water treatment at the American Tunnel, will have been accepted by another party or parties.

e. All projects on the "A" List are confirmed by the Division to be complete pursuant to paragraph 8a.

f. Treatment of Cement Creek has ceased.

g. It is demonstrated in accordance with Appendix A that the Reference Water Quality is being maintained without continued treatment of Cement Creek.

15. The Division will determine that there has been a Failed Permit Termination Assessment if any of the criteria listed in Paragraph 14 above are not met.

IX. PREMATURE TERMINATION OF CONSENT DECREE

16. This Consent Decree may be prematurely terminated:

a. By SGC, only after completion of all of the projects contained on the "A" List, if SGC determines that a Successful Permit Termination Assessment pursuant to paragraph 14 is not feasible.

b. By the Division, only if SGC is not implementing the mitigation projects in accordance with the schedule established in this Consent Decree, or is not performing the mitigation projects in a workmanlike manner or in accordance with the Reclamation Standards of DMG and the Work Plans.

17. If either Party determines to prematurely terminate this Consent Decree, notification will be made and written explanation provided to the other party and to the Court at least sixty days prior to the effective date of the termination.

18. If this Consent Decree is prematurely terminated, SGC will treat any flow from the American Tunnel and the entire flow of Cement Creek up to a treatment capacity of 1800 gallons per minute in accordance with its CDPS permit for a period of thirty months thereafter. SGC's agreement to continue treatment of Cement Creek flows for thirty-month period after premature termination of this Consent Decree is made without conceding any legal responsibility other than that created by this Consent Decree to do so or any responsibility

other than that created by this Consent Decree for water quality conditions after placement of seals within the Mine. SGC specifically reserves any legal positions that it may have with respect to such issues, and nothing in this Consent Decree shall be construed as an admission or concession on such issues.

19. In the event that this Consent Decree is prematurely terminated, CDPS Permits No. CO-0027529 and CO-0036056 will remain in effect.

X. SUCCESSFUL PERMIT TERMINATION ASSESSMENT/CONSENT DECREE COMPLETION

20. In the event of a Successful Permit Termination Assessment pursuant to paragraph 14, the Consent Decree will be deemed completed, at which time (a) CDPS Permits No. CO-0027529 and CO-0036056 will be terminated, (b) SGC's mitigation projects permit or permits will be terminated, (c) SGC will be released from the financial surety requirement of paragraph 25, and (d) the Court's jurisdiction will cease. Notice of termination of these permits and Agreement Completion will be provided by the Division to SGC and to the Court.

21. Public notice of termination of permits will be provided in accordance with the Act and regulations.

22. The Division agrees, based on the facts of this case, that in the event of a Successful Permit Termination Assessment and termination of these permits no future CDPS point source permits will be required of SGC or its parent company for seeps or springs which may emerge or increase in the Upper Animas River or Cement Creek drainages following installation and closure of bulkhead seals in the American or Terry Tunnels.

XI. PERMITS

23. All permits issued by the Division to SGC will be issued in accordance with all then-existing applicable statutes and regulations.

24. Permitting

a. Mitigation Projects Permit.. A water quality permit substantially in the form of Appendix C will be issued by the Division to cover all of the mitigation projects contemplated by this Consent Decree. This permit will be terminated when the mitigation projects have been confirmed by the Division to be completed pursuant to paragraph 8a, and there will be no continuing obligation of SGC to maintain water quality permits or treatment at the mitigation project sites.

b. CDPS Permits Renewal. SGC will continue to operate the American Tunnel water treatment facilities until they are no longer necessary to maintain the dissolved zinc criterion at the Reference Point pursuant to Appendix A. Diversion of Cement Creek waters, which are different in character from mine water, may bring altered conditions into the American Tunnel water treatment system. Since the fourth quarter of 1993, SGC has passed all chronic Whole Effluent Toxicity (WET) tests at the Instream Waste Concentration (IWC) ratio, which demonstrates that the treated mine water discharge has not been toxic. SGC's renewal American Tunnel permit will not include WET testing after treatment of Cement Creek flow begins. The Division determined that if current treatment levels are maintained and Cement Creek flows are treated, downstream aquatic life uses will be protected. Effluent

limitations in the American Tunnel discharge permit will continue to be based on BAT standards until the permit is terminated.

c. Other Permits. All activities undertaken by SGC pursuant to this Consent Decree will be undertaken in accordance with the requirements of all applicable local, state and federal statutes, regulations, and ordinances. SGC will make timely application for any necessary permits or certifications. If other environmental permits are required for the mitigation projects, such as Section 404 permits or "reclamation only" MLR permits, the Division will cooperate with SGC in obtaining such permits from the appropriate agencies so that the projects can go forward in a timely fashion. If necessary permits for an "A" List project are ultimately denied by the responsible agency, that portion of the mitigation project will be deleted from the requirements of the Consent Decree, and an additional mitigation project will be implemented in its place. Work plans for any such projects will be submitted to the Division in accordance with paragraph 13.

XII. FINANCIAL SURETY

25. Not later than thirty days after entry of this Consent Decree, SGC will provide financial surety in the amount of $5,000,000 in the form of an irrevocable letter of credit, in the favor of the Water Quality Control Division of the Colorado Department of Public Health and Environment, issued by a federally chartered banking institution.

a. The Division may draw on the letter of credit if SGC files for bankruptcy or becomes bankrupt and discontinues treatment of water necessary to maintain

water quality and may use the proceeds to protect the waters of the state by entering and operating the treatment facility at the American Tunnel portal and disposing treatment residues at SGC's existing tailings pond.

b. This letter of credit will provide that it is irrevocable for a minimum initial period of one year and will be automatically extended for minimum additional one-year periods unless at least ninety days prior to an expiration date, the issuing institution has provided to the Division by registered mail or by courier, notice of its election not to extend the letter of credit.

c. If the financial institution elects not to extend the letter of credit, not later than forty-five days prior to its expiration, SGC will provide a letter of credit from an alternate federally chartered banking institution, its effective date to be such that there is no lapse of time in which there exists no financial surety.

d. The Division will be entitled, and the letter of credit will provide that the Division will be entitled, to draw a draft under the letter of credit in the event that (1) the letter of credit will terminate or expire within the next ten business days; and (2) the Division has not received notice from SGC that an alternate letter of credit has been provided. In the event that the Division elects to draw any drafts under these circumstances, it will not be entitled to retain or use any portion of the proceeds of the drafts unless the provisions of paragraph 25a are met. Instead, the Division will immediately deposit all of the proceeds of any drafts so obtained into one or more accounts. The amounts deposited in these accounts will serve as surety for SGC's obligations pursuant to paragraph 25. The Parties will

simultaneously enter into an escrow agreement with respect to each account that contains proceeds of the drafts on the same terms and conditions as for the above letter of credit, except that SGC will be entitled to withdraw the escrowed amount immediately to the extent that it provides a letter of credit to the Division from an alternate financial institution pursuant to this paragraph.

e. The Division will be entitled, and the letter of credit will provide that the Division will be entitled, to draw a draft under the letter of credit when its draft is accompanied by a signed statement by the Executive Director of the Colorado Department of Public Health and Environment or their designated representative and the Attorney General of the State of Colorado or their designated representative, certifying as follows:

> We hereby certify that the State of Colorado is entitled to perform certain actions pursuant to paragraph 25a and/or 25c of the Consent Decree entered into by the State and Sunnyside Gold Corporation and the amount of the accompanying draft under letter of credit no. _____, dated _____, is anticipated or estimated to be necessary for the State's performance of these actions.

f. In the event that the Division draws upon the financial surety pursuant to either paragraph 25a or 25c above, the amounts will be placed in a custodial fund for its use pursuant to this Consent Decree.

g. SGC may terminate the financial surety at any time following a Successful Permit Termination Assessment pursuant to paragraph 14.

XIII. FORCE MAJEURE

26. Definition of force majeure. Force majeure is defined, for the purposes of this Consent Decree, as an event, circumstance, or condition arising from cause(s) beyond the control of the Party asserting these force majeure provisions that prevents the performance of any obligation in this Consent Decree, or that causes delays in the performance of such an obligation that cannot be avoided through the exercise of due care. Force majeure will not include increased costs or expenses associated with the implementation of this Consent Decree, or changed financial circumstances; or the failure to apply in a timely manner for any required governmental permit, license, land use authorization or entitlement, or failure to make timely provision of all information required therefor; or the failure of SGC to obtain access on mitigation project sites not owned by it, thus preventing it from doing the project; or the failure of SGC to obtain access for the Division on mitigation project sites not owned by it pursuant to paragraph 34, thus preventing the Division from inspection of the project. Force majeure for the Division will not include lack of agency financial or staff resources.

27. Effect of force majeure. A force majeure will excuse either Party from timely performance of a particular obligation under this Consent Decree for that time during which the force majeure is in effect.

XIV. ENFORCEMENT OF CONSENT DECREE

28. Remedies for Breach. In the event that either Party breaches any term or condition of this Consent Decree, the nonbreaching Party may seek any appropriate relief in

this Court, including specific performance of obligations under the Consent Decree and relief pursuant to the contempt powers of this Court.

29. Effect of Bankruptcy Petition. The obligations imposed by this Consent Decree require the performance by SGC of actions which are reasonably designed to protect public health, welfare and the environment. Any enforcement of the obligations imposed by this Consent Decree constitutes, solely for the purposes of 11 U.S.C. § 392(b)(5) (1988), the enforcement of a judgment, other than a money judgment, obtained in an action to enforce the State's regulatory and police powers.

30. Conflict Between Consent Decree, Appendices, CDPS Permits and Work Plans. In the event of conflict between any requirement, term, condition, or provision of this Consent Decree and any requirement, term, or provision of any Work Plan, or of any appendix to this Consent Decree, or provision of any CDPS permit issued by the Division to SGC, the requirements, terms, conditions, and provisions of this Consent Decree will control. However, to the extent that such a permit is more specific than, or contains additional requirements, terms, conditions, and provisions not included in this Consent Decree, those requirements, terms, conditions, and provisions of the permit will be given effect.

XV. MUTUAL RELEASE AND COVENANT NOT TO SUE

31. Covenant-Not-To-Sue. In consideration of the actions to be performed by SGC under this Consent Decree, the Division covenants not to sue or to take administrative action against SGC for seeps or springs which may emerge or increase in the Upper Animas River or

Cement Creek drainages following installation of bulkhead seals in the American or Terry Tunnels, during the term of this Consent Decree and thereafter, if SGC fulfills the requirements of the Consent Decree, there is a Successful Permit Termination Assessment pursuant to paragraph 14 and permit termination is achieved. If this Consent Decree terminates other than through termination of the permits, the Division covenants not to sue or to take administrative action against SGC for actions taken or work performed by SGC pursuant to the terms of this Consent Decree, provided that the Work was performed in a workmanlike manner and in conformance with the Work Plans and DMG Reclamation Standards. Specifically, the Division will not assert in any administrative or judicial action that the acceleration of mine pool filling by injection of water, and the addition of alkalinity to such water, has caused the mine pool to become a treatment facility subject to point source discharge permit requirements.

XVI. INDEMNIFICATION

32. Indemnification of State by SGC. SGC agrees to hold harmless and indemnify the State against all claims for damages by non-parties to this Consent Decree to the extent that such claims arise from the acts or omissions of SGC, its agents, contractors, consultants, and employees in carrying out the mitigation projects required by or undertaken pursuant to any provision of this Consent Decree and its appendices. In consideration of actions to be performed by DMG under this Consent Decree, SGC covenants not to sue DMG for activities performed or not performed by DMG or related to this Consent Decree.

33. Nothing in this Consent Decree will be construed to limit the enforcement or other authorities of the Division except as provided in this Consent Decree. Nothing in this Consent Decree will be construed to limit the authority of any other Department or Division of the State of Colorado.

XVII. ACCESS

34. SGC will provide access to the mitigation project sites owned by SGC, excluding office areas, to the State, its Counsel, and such agents or consultants as the Attorney General or the Director of the Division may designate for monitoring the Work or the conditions which are addressed pursuant to this Consent Decree. SGC will use its best efforts to secure such access on mitigation project sites not owned by SGC.

XVIII. NOTICE TO PARTIES

35. Any notice, communication, or certification to be given pursuant to this Consent Decree will be in writing and will be given either in person or by certified mail, to the following persons at the following addresses, or to such other persons or addresses as the Parties may designate by providing written notice to the other party.

a. Notice to SGC will be given to:

William B. Goodhard, Manager
Sunnyside Gold Corporation
P.O. Box 777
Silverton, CO 81433

William C. Robb, Esq.
Dufford & Brown, P.C.
1700 Broadway, Suite 1700
Denver, CO 80290-1790

b. Notice to the Division will be given by providing copies to each of the following:

J. David Holm, Director
Water Quality Control Division
Colorado Department of Public Health
and Environment
4300 Cherry Creek Drive South
Denver, CO 80222

Robert J. Shukle, Chief
Permits and Enforcement Section
Water Quality Control Division
Colorado Department of Public Health
and Environment
4300 Cherry Creek Drive South
Denver, CO 80222

Karen A. Kishbaugh
Assistant Attorney General
Natural Resources Section
Office of the Attorney General
1525 Sherman Street, 5th Floor
Denver, CO 80203

XIX. AMENDMENT OF CONSENT DECREE

36. The Parties may jointly petition the Court for amendment of this Consent Decree. Any amendment to any portion of this Consent Decree or any of it appendices must be in writing, must be approved by Court order, and will have as its effective date the date such order is entered by the Court or such other date as the Court may order.

XX. RETENTION OF DISTRICT COURT JURISDICTION/ DISPUTE RESOLUTION

37. Retention of District Court Jurisdiction/Dispute Resolution. This Court will retain jurisdiction over this Consent Decree for the purpose of resolving any disputes regarding the interpretation or requirements of this Consent Decree and to resolve any disputes which may arise between the parties pursuant thereto. Any such dispute may be brought before the Court by a written motion from either party and the procedure for resolution of the dispute will be determined by the Court.

XXI. EFFECTIVE DATE

38. This Consent Decree shall become effective upon the date of its entry by the Court.

XXII. GOVERNED BY COLORADO LAW

39. The Consent Decree will be governed by the laws of the State of Colorado and will be interpreted consistent therewith.

XXIII. LIST OF APPENDICES

40. List of Appendices.

A. Definition of water quality reference point;

B. List of mitigation projects;

C. Permit for mitigation projects with attached Work Plans;

D. Renewal CDPS Permit No. CO-0027529.

SO ORDERED this _____ day of _____, 1996.

Nancy E. Rice

District Court Judge

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The undersigned parties hereby consent to the entry by the Court of this Consent Decree in the case of Sunnyside Gold Corporation v. Colorado Water Quality Control Division, Colorado Department of Public Health and the Environment, # 94 CV 5459, District Court, City and County of Denver.

DUFFORD & BROWN, P.C.

William C. Robb, 5898
1700 Broadway, Suite 1700
Denver, CO 80290-1701
Telephone: (303) 861-8013

ATTORNEYS FOR SUNNYSIDE GOLD CORPORATION

OFFICE OF THE ATTORNEY GENERAL

GALE A. NORTON
Attorney General
TIMOTHY M. TYMKOVICH
Solicitor General
JENNIFER L. GIMBEL
Deputy Attorney General
MARTHA E. RUDOLPH
First Assistant Attorney General

Karen A. Kishbaugh, 18866*
Assistant Attorney General
Natural Resources Section

ATTORNEYS FOR WATER QUALITY CONTROL DIVISION
1525 Sherman Street, 5th Floor
Denver, CO 80203
Telephone: (303) 866-5072
*Counsel of Record

SUNNYSIDE GOLD CORPORATION

Richard C. Kraus, President

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Patti Shwayder, Acting Executive Director, Colorado Department of Public Health and Environment

WATER QUALITY CONTROL DIVISION OF THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

J. David Holm, Director
Water Quality Control Division
Colorado Department of Public Health and Environment

APPENDIX A
Reference Water Quality

A-1 Definition of "Reference Water Quality" and the Time Periods of Concern

"Reference water quality" is defined as a statistical determination of dissolved zinc (Zn) concentrations at reference point A-72 for the time period of January 5, 1989 through September 6, 1995. During this time there exist 63 measurements of dissolved zinc at the reference point which also have either simultaneous measurements of stream flow or inferred stream flows based on linear regression analysis of flow data from the Howardsville Station to Station A72. The set of 63 measurements of coupled flow and dissolved Zn data collected is termed "the baseline set" representing the available history of dissolved Zn and stream flow at the reference point. This set of data defines reference water quality against which future water quality will be compared. The reference water-quality data are listed in Attachment 1.

Time following the signing of a Consent Agreement between the State of Colorado and Sunnyside Gold Company (SGC) shall be divided into two periods:

- "Project period" is defined to be the time period that begins with the initiation of mine closure and reclamation activities that are the subject of the Consent Agreement and ends when (a) A-list projects have been completed; (b) mine pool equilibrium has been reached; (c) Cement Creek treatment has ceased; and (d) lower American Tunnel hydrologic controls and portal plug are complete.

- "Post-project period" is defined to be the time period that begins immediately after the "project period" and ends when SGC has been released from water-quality permits under the terms of the Consent Agreement.

A-2 Classes of Flow

The high-mountain portion of a river such as the Animas is subject to seasonal fluctuations in flow due to hydrologic response of the basin to climatic factors. Flow and the concentration of dissolved constituents in any river water are generally inversely related.

Based on measurements of stream flow at reference point A-72 from 1991-1995, flow conditions at this point on the Animas consist of three classes:

- Low Flow (stream flow < 100 cubic feet per second)
- Intermediate Flow (100 cfs < stream flow < 300 cfs)
- High Flow (stream > 300 cfs)

Each of these classes of flow conditions represents a physical response to the complex factors that may govern interactions between meteoric water and the geology. It is appropriate to evaluate water quality separately for each of the three classes.

A-3 Method for Evaluating Water Quality with Respect to Reference Conditions During the Project Period

(a) Each month during the project period, SGC will collect a water-quality sample at Station A72. Analyses shall be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been approved by the Division. SGC will obtain the stream-flow datum that applies to the relevant sampling event from the USGS data collection system. In the event that the stream gage at A-72 is frozen and/or inoperable yet a water sample is obtained, flow may be estimated.

(b) SGC will report the flow value and the dissolved zinc value in a written submittal to WQCD. The submittal will be presented together with the next monthly Discharge Monitoring Report that is due to WQCD following receipt by SGC of the laboratory report for the dissolved zinc value. Records of monitoring information shall include:

1. The date, exact place, and time of sampling or measurements;
2. The individual(s) who performed the sampling or measurements;
3. The dates the analyses were performed;
4. The individual(s) who performed the analyses;
5. The analytical techniques or methods used; and
6. The results of such analyses.

(c) In addition to reporting the data, SGC will calculate and report an analysis of the data in the following form:

- Each month, SGC will calculate an index value representing relative number of standard deviations of the observed value of dissolved Zn from the mean value of dissolved Zn for the appropriate flow class in the reference water-quality set. The index number is calculated as:

$N_i = (x_i - \bar{x}_f) / s_f$ where

N_i is the index number;

x_i is the observed value of dissolved Zn for the reporting period or the average of dissolved Zn valves if more than one sample is taken in the reporting period;

$\bar{x}_f$ is the mean value of dissolved Zn in the reference water-quality set for the flow class to which the observed value belongs; and

s_f is the standard deviation of dissolved Zn in the reference water-quality set for the flow class to which the observed value belongs.

- The index numbers will be plotted against the sampling period number (which begins with the number 1 as the first sampling event of the project period) on a graph which has the index number (called "normalized residual") as the ordinate and the sampling period number as the abscissa. An example of such a graph is shown on Figure 1a.

- SGC will compute a 12-month moving average of the index numbers, as follows. Beginning with the twelfth (12th) month of the project period, SGC will compute the mean of the index numbers for the 12-month period. In each subsequent month, the oldest index number will be dropped and the newest index number added to the set of 12 from which the mean index number is being computed.

- The moving-average index number also will be plotted over time, as shown in the example of Figure 1b.

(d) Evaluation of the normalized data will be performed as follows:

- If a single observation has an index number greater than +2.0 (i.e., that observation has a concentration of dissolved Zn greater than 2 standard deviations above the mean value of dissolved zinc for the relevant flow class in the data of the reference water-quality set), SGC will have a repeat analysis done on the sample.

- If two out of three consecutive observations have index values greater than +2.0, then SGC will report by the 28th day of the month following receipt of the second of those observations:

1. which subbasin is experiencing the increase;

2. the nature of the ongoing remediation activities in the affected basin(s); and

3. known activities not related to mine closure taking place in the affected basin.

If the increase is related to mine closure, SGC will specify the actions and time table to be implemented to reverse the trend.

- If the moving average index number of the most recent 12-month period exceeds a value of +0.577 (representing the upper value of the range of normalized residual values expected in a twelve-period sample at a confidence level of 97.5% around the mean computed on a flow class - by - flow class basis), SGC will meet with WQCD to discuss the data and determine what, if any action is required. The initial action, if any is deemed necessary, will be for SGC to investigate possible causes of the elevated Zn values. If the cause is related to the sealing of the mine or due to mitigation projects, SGC will respond either by increased treatment of Cement Creek, adjustment of the water elevation of the mine pool, or implementation of the "B" list of projects. If the "B" list of projects already has been completed, SGC may add additional mitigation projects under Paragraph 13.

- Should new, adverse effects on dissolved Zn values in the Upper Animas Basin occur through man-made or natural causes that are not caused by closure activities of the Sunnyside Mine or mitigation activities carried out by SGC under this Agreement, SGC will document and monitor the causes and their effects so that a mathematical adjustment can be made to the observational data at A72 prior to using the information in statistical analyses of water quality.

A-4 Method of Evaluating Water Quality with Respect to Reference Conditions - Post Project Period

(a) During the Post-Project Period, SGC will collect at least 13 samples during the low-flow class and 12 samples in each of the medium and high-flow classes, subject to the following conditions:

- The sample interval shall be ≥ seven (7) days;

- The sample interval shall be ≤ forty-five (45) days (in the event of extreme winter conditions at A-72, the 45 day maximum may be extended);
- The post-project monitoring period will be at least two (2) years.

(b) Computation and graphing of the index numbers (as described in Section A-3 above) will continue through the post-project period.

(c) When the conditions of A-4(a) have been met and SGC is satisfied that the closure activities have met the permit release criteria of paragraph 14 of the Consent Decree, SGC may present an analysis of the post-project period, as follows:

- For each flow class in the post-project period, SGC will compile the observed values of dissolved zinc and compute the mean and standard deviation of those values.

- For each flow class, the average dissolved zinc concentration of the post-project period will be compared to the average dissolved zinc concentration of the equivalent flow class in the reference water-quality set using a one-sided t-test for the difference of two means at the 0.05 significance level using the procedure of paragraph 3-3.2.1 of National Bureau of Standards Handbook 91, Experimental Statistics (1966, p. 3-34); see Attachment 2.

(d) If the conditions of paragraph 14 of the Consent Agreement have been met and the statistical tests of Section A-4(c) show that there has not been a statistically discernible increase in dissolved Zn concentrations at the reference point, SGC will be entitled to permit release under the terms of paragraph 8 of the Consent Agreement.

Attachment 2

Application of the One-sided T-test to Dissolved Zinc Concentrations at A-72

For each flow class:

(1) Compile the dissolved Zn data for the two data sets, and calculate for the number of samples each set.

(2) Let α, the significance level of the test, be 0.05.

(3) Look up $t_{1-\alpha}$ for df = $n_R + n_M - 2$ in Table A - 4 of NBS - 91, where

df = degrees of freedom;
n_R = number of samples in the reference set; and
n_M = number of samples in the monitoring set.

(4) Compute the mean ($\bar{x}_R$ and $\bar{x}_M$) and variance (s^2_R and s^2_M) for the reference (R) and monitoring (M) sets.

(5) Compute the pooled variance of the two data sets

$$sp = \sqrt{\frac{(n_R - 1)S^2_R + (n_M - 1)S^2_M}{n_R + n_M - 2}}$$

(6) Compute the test statistic, u

$$u = t_{1-\alpha} * sp * \sqrt{\frac{n_R + n_M}{n_R * n_M}}$$

(7) If ($\bar{x}_M - \bar{x}_R$) > u, decide that the average of the post-closure monitoring period exceeds that of the reference water quality set; otherwise, decide that there is no reason to believe that the average of the post-closure monitoring period exceeds the average of the reference water quality set.

ATTACHMENT 1

REFERENCE WATER QUALITY DATA - BY DATE

DATE	Q	ZN
5-Jan-89	30	510
14-Feb-89	22	550
7-Mar-89	17	940
24-Apr-89	216	670
30-May-89	1125	320
29-Jun-89	472	240
24-Jul-89	226	300
2-Aug-89	385	270
4-Sep-89	69	370
5-Oct-89	87	360
2-Nov-89	40	490
13-Dec-89	22	550
10-Jan-90	20	450
6-Feb-90	14	590
5-Mar-90	14	470
19-Apr-90	51	490
2-May-90	72	560
14-Jun-90	1238	450
12-Jul-90	312	350
1-Aug-90	93	380
4-Sep-90	69	340
8-Oct-90	231	520
7-Nov-90	98	450
17-Dec-90	46	520
16-Jan-91	38	530
18-Feb-91	27	620
5-Sep-91	131	380
6-Sep-91	185	370
7-Sep-91	261	310
9-Sep-91	269	260
10-Sep-91	263	270
21-Oct-91	75	400
30-Apr-92	512	440
26-May-92	865	220
23-Jun-92	854	240
24-Jun-92	874	290
25-Jun-92	905	160
23-Jul-92	372	240
19-Aug-92	134	360
24-Sep-92	121	370
14-Oct-92	80	480
15-Oct-92	78	510
22-Oct-92	83	470
15-Jun-93	2090	180
20-Jul-93	434	290
21-Jul-93	434	260
23-Aug-93	209	270
28-Sep-93	124	370

DATE	Q	ZN
10-Nov-93	86	520
29-Mar-94	80	670
16-May-94	654	510
18-May-94	603	500
2-Jun-94	1370	300
27-Jun-94	677	200
18-Jul-94	173	300
26-Jul-94	159	360
28-Sep-94	143	370
9-Nov-94	106	550
18-Jan-95	72	680
7-Feb-95	90	600
12-Apr-95	127	790
21-Jun-95	1950	350
6-Sep-95	239	360

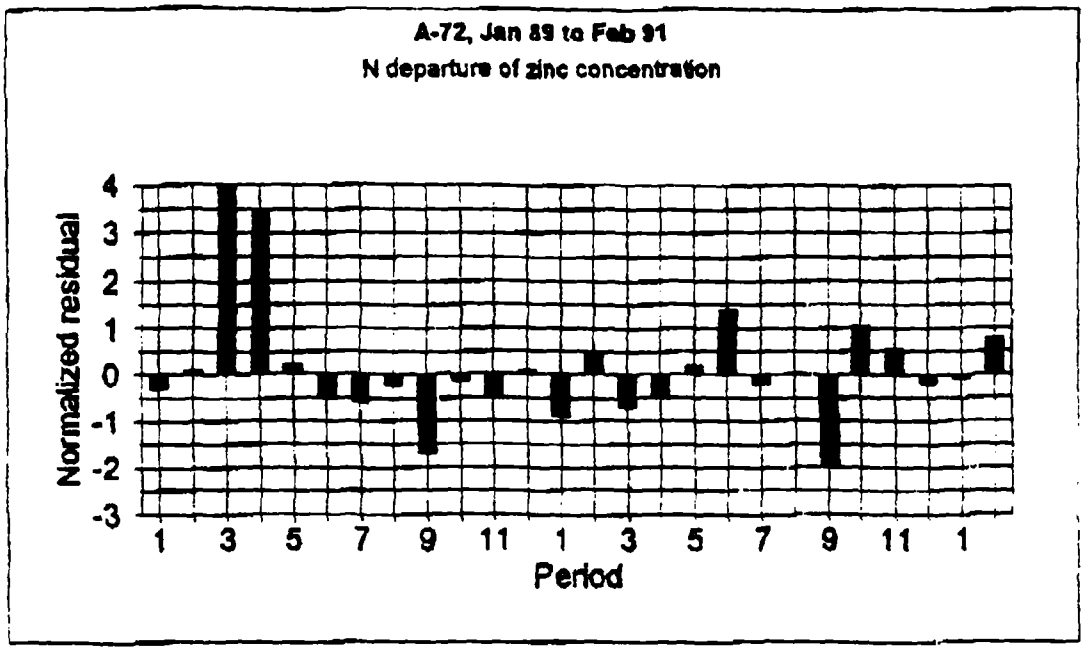
SORTED BY FLOW IN EACH FLOW CLASS

Q<100 cfs			*100 cfs < Q < 300 cfs*			*Q > 300 cfs*		
DATE	Q	ZN	DATE	Q	ZN	DATE	Q	ZN
6-Feb-90	14	590	9-Nov-94	106	550	12-Jul-90	312	350
5-Mar-90	14	470	24-Sep-92	121	370	23-Jul-92	372	240
7-Mar-89	17	940	28-Sep-93	124	370	2-Aug-89	385	270
10-Jan-90	20	450	12-Apr-95	127	790	20-Jul-93	434	290
14-Feb-89	22	550	5-Sep-91	131	380	21-Jul-93	434	260
13-Dec-89	22	550	19-Aug-92	134	360	29-Jun-89	472	240
18-Feb-91	27	620	28-Sep-94	143	370	30-Apr-92	512	440
5-Jan-89	30	510	26-Jul-94	159	360	18-May-94	603	500
16-Jan-91	38	530	18-Jul-94	173	300	16-May-94	654	510
2-Nov-89	40	490	6-Sep-91	185	370	27-Jun-94	677	200
17-Dec-90	46	520	23-Aug-93	209	270	23-Jun-92	854	240
19-Apr-90	51	490	24-Apr-89	216	670	26-May-92	865	220
4-Sep-89	69	370	24-Jul-89	226	300	24-Jun-92	874	290
4-Sep-90	69	340	8-Oct-90	231	520	25-Jun-92	905	160
2-May-90	72	560	6-Sep-95	239	360	30-May-89	1125	320
18-Jan-95	72	680	7-Sep-91	261	310	14-Jun-90	1238	450
21-Oct-91	75	400	10-Sep-91	263	270	2-Jun-94	1370	300
15-Oct-92	78	510	9-Sep-91	269	260	21-Jun-95	1950	350
14-Oct-92	80	480				15-Jun-93	2090	180
29-Mar-94	80	670						
22-Oct-92	83	470						
10-Nov-93	86	520						
5-Oct-89	87	360						
7-Feb-95	90	600						
1-Aug-90	93	380						
7-Nov-90	98	450						
Mean		***519***			***399***			***306***
Std Dev		***124***			***144***			***104***

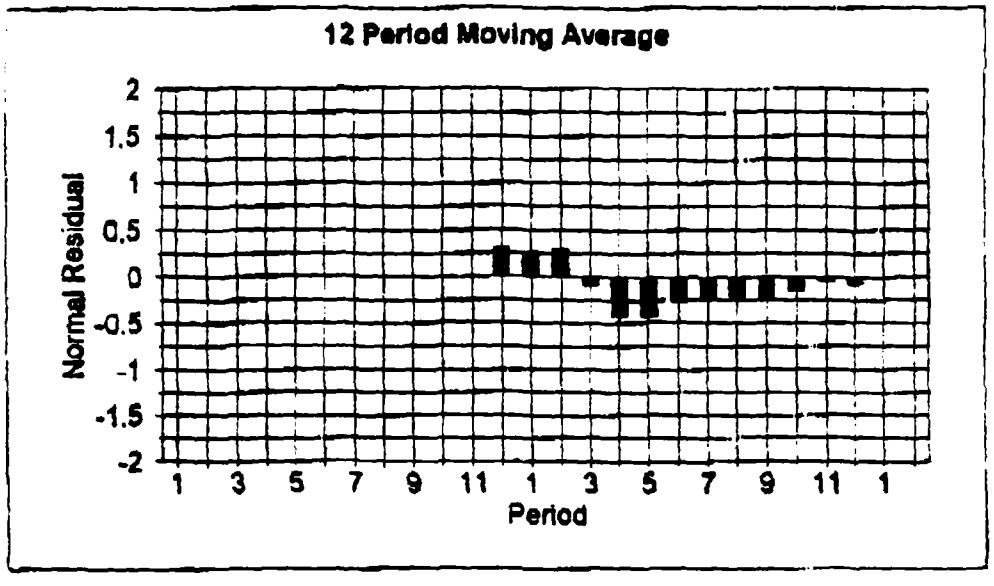
11/11/96

Figure 1

1a.



1b



UNITED STATES DEPARTMENT OF COMMERCE • Luther H. Hodges, *Secretary*
NATIONAL BUREAU OF STANDARDS • A. V. Astin, *Director*

Experimental Statistics

Mary Gibbons Natrella
National Bureau of Standards

Reprint of the Experimental Statistics Portion
of the AMC Handbook

By permission of the
Army Materiel Command

National Bureau of Standards Handbook 91

Issued August 1, 1963

Reprinted October 1966 With Corrections

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402

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TABLE A-4. PERCENTILES OF THE t DISTRIBUTION



df	$t_{.55}$	$t_{.70}$	$t_{.80}$	$t_{.90}$	$t_{.95}$	$t_{.975}$	$t_{.99}$	$t_{.995}$
1	.325	.727	1.376	3.078	6.314	12.706	31.821	63.657
2	.289	.617	1.061	1.886	2.920	4.303	6.965	9.925
3	.277	.584	.978	1.638	2.353	3.182	4.541	5.841
4	.271	.569	.941	1.533	2.132	2.776	3.747	4.604
5	.267	.559	.920	1.476	2.015	2.571	3.365	4.032
6	.265	.553	.906	1.440	1.943	2.447	3.143	3.707
7	.263	.549	.896	1.415	1.895	2.365	2.998	3.499
8	.262	.546	.889	1.397	1.860	2.306	2.896	3.355
9	.261	.543	.883	1.383	1.833	2.262	2.821	3.250
10	.260	.542	.879	1.372	1.812	2.228	2.764	3.169
11	.260	.540	.876	1.363	1.796	2.201	2.718	3.106
12	.259	.539	.873	1.356	1.782	2.179	2.681	3.055
13	.259	.538	.870	1.350	1.771	2.160	2.650	3.012
14	.258	.537	.868	1.345	1.761	2.145	2.624	2.977
15	.258	.536	.866	1.341	1.753	2.131	2.602	2.947
16	.258	.535	.865	1.337	1.746	2.120	2.583	2.921
17	.257	.534	.863	1.333	1.740	2.110	2.567	2.898
18	.257	.534	.862	1.330	1.734	2.101	2.552	2.878
19	.257	.533	.861	1.328	1.729	2.093	2.539	2.861
20	.257	.533	.860	1.325	1.725	2.086	2.528	2.845
21	.257	.532	.859	1.323	1.721	2.080	2.518	2.831
22	.256	.532	.858	1.321	1.717	2.074	2.508	2.819
23	.256	.532	.858	1.319	1.714	2.069	2.500	2.807
24	.256	.531	.857	1.318	1.711	2.064	2.492	2.797
25	.256	.531	.856	1.316	1.708	2.060	2.485	2.787
26	.256	.531	.856	1.315	1.706	2.056	2.479	2.779
27	.256	.531	.855	1.314	1.703	2.052	2.473	2.771
28	.256	.530	.855	1.313	1.701	2.048	2.467	2.763
29	.256	.530	.854	1.311	1.699	2.045	2.462	2.756
30	.256	.530	.854	1.310	1.697	2.042	2.457	2.750
40	.255	.529	.851	1.303	1.684	2.021	2.423	2.704
60	.254	.527	.848	1.296	1.671	2.000	2.390	2.660
120	.254	.526	.845	1.289	1.658	1.980	2.358	2.617
∞	.253	.524	.842	1.282	1.645	1.960	2.326	2.576

Adapted by permission from *Introduction to Statistical Analysis* (2d ed.) by W. J. Dixon and F. J. Massey, Jr., Copyright, 1957, McGraw-Hill Book Company, Inc. Entries originally from Table III of *Statistical Tables* by R. A. Fisher and F. Yates, 1938, Oliver and Boyd, Ltd., London.

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3-3.2 DOES THE AVERAGE OF PRODUCT A EXCEED THE AVERAGE OF PRODUCT B?

3-3.2.1 (Case 1)—Variability of A and B is Unknown, but can be Assumed to be Equal.

Data Sample 3-3.2.1—Surface Hardness of Steel Plates

A study was made of the effect of two grinding conditions on the surface hardness of steel plates used for intaglio printing. Condition A represents surfaces "as ground" and Condition B represents surfaces after light polishing with emery paper. The observations are hardness indentation numbers.

Condition A	Condition B
187	157
157	152
152	148
164	158
159	161
164	
172	

[One-sided t-test]

Procedure	Example
(1) Choose α, the significance level of the test.	(1) Let $\alpha = .05$
(2) Look up $t_{1-\alpha}$ for $\nu = n_A + n_B - 2$ degrees of freedom in Table A-4.	(2) $n_A = 7$ $n_B = 5$ $\nu = 10$ $t_{.95}$ for 10 d.f. $= 1.812$
(3) Compute: $\bar{X}_A$ and s_A^2, $\bar{X}_B$ and s_B^2, from the n_A and n_B measurements from products A and B, respectively.	(3) $\bar{X}_A = 165$ $s_A^2 = 134$ $\bar{X}_B = 155.2$ $s_B^2 = 26.7$
(4) Compute $s_P = \sqrt{\frac{(n_A - 1)\, s_A^2 + (n_B - 1)\, s_B^2}{n_A + n_B - 2}}$	(4) $s_P = \sqrt{\frac{6\,(134) + 4\,(26.7)}{10}}$ $= \sqrt{91.08}$ $= 9.544$
(5) Compute $u = t_{1-\alpha}\, s_P \sqrt{\frac{n_A + n_B}{n_A\, n_B}}$	(5) $u = (1.812)\,(9.544)\,\sqrt{\frac{12}{35}}$ $= 17.294\ (.5855)$ $= 10.1$
(6) If $(\bar{X}_A - \bar{X}_B) > u$, decide that the average of A exceeds the average of B; otherwise, decide there is no reason to believe that the average of A exceeds the average of B.	(6) $(\bar{X}_A - \bar{X}_B) = 9.8$, which is not larger than u. There is no reason to believe that the average hardness for Condition A exceeds the average hardness for Condition B.
(7) Let m_A and m_B be the true averages of A and B. Note that the interval from $\{(\bar{X}_A - \bar{X}_B) - u\}$ to ∞ is a $1 - \alpha$ one-sided confidence interval estimate of the true difference $(m_A - m_B)$.	(7) $(\bar{X}_A - \bar{X}_B) - u = 9.8 - 10.1 = -0.3$. The interval from -0.3 to ∞ is a 95% one-sided confidence interval estimate of the true difference between averages.

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APPENDIX B

MITIGATION PROJECTS

B-1 Mitigation Projects

SGC is listing nine mitigation projects which will offset potential loading increases resulting from waters returning to their natural flow paths around the Sunnyside Mine. The projects are listed as "A" list or primary (those projects on which work will commence after the hydraulic seal valves are closed) and "B" list or secondary (those projects which may need to be completed in order for the dissolved zinc concentrations to meet the criteria at Reference Point AR-72). The secondary list will be evaluated after the primary list has been completed and the reference water quality can be monitored to see the effects of the completed primary projects on maintaining the dissolved zinc loading from the Upper Animas Basin. Completion of all projects on the secondary list may not be necessary if the reference water quality in the Animas is being maintained without them.

SGC will evaluate, engineer and complete work in a workmanlike, safe, proper and expedient manner according to the work plans attached to this Consent Decree. All work on mitigation sites will focus on reducing the dissolved zinc loading at the reference point and not on meeting specific standards at each mitigation site.

Mitigation on sites not owned or controlled by SGC will require permission of property owners to enter their property to evaluate and do mitigation work. Should SGC identify more beneficial projects, they will replace other projects on the "B" or secondary project list with concurrence from WQCD.

B-2 "A" List - Primary Projects

(1) Sunnyside Mine Pool

After closure of the valve in the property line seal, SGC will introduce high pH water into the pool during filling of the mine pool. The projected target pH of mine water would be 9.0 to 10.0 versus current 6.5 at the American Tunnel. This will allow for the mine pool to reach equilibrium from a basic pH as oxygen is depleted rather than from an acid pH.

(2) Mine Waste Dump - South Fork of Cement Creek

The remainder of the mine waste dump will be removed and consolidated with addition of high pH material for stability. The area underlying the waste dump will be revegetated in accordance with SGC's MLR permit. The consolidated material will be capped and revegetated.

(3) Surface Mill Tailings at Eureka - Eureka Townsite

The surface tailings at Eureka will be removed from contact with stream water and consolidated with addition of high pH material for stability. Due to this area existing in an alluvial fan which consists primarily of gravel, no revegetation will be done. The consolidated material will be capped and revegetated.

(4) Gold Prince Mill Tailings and Closure Bulkhead - Head of Placer Gulch

The existing closure bulkhead which prevents entry will be reinforced and the portal will be reshut to create a water retaining bulkhead. The surface mill tailings will be removed and consolidated with high pH material. Disturbances will be revegetated. The consolidated material will be capped and revegetated.

(5) Koehler Longfellow Portal and Mine Waste Dump - Headwaters of Mineral Creek

The mine waste dumps will be removed from the creek bottoms and consolidated with high pH material for stability. Areas that do not occur within talus slopes will be revegetated. The consolidated material will be capped and revegetated. Run-on controls will be constructed to isolate clean waters from running across or through waste materials.

During reclamation of the mine waste dumps, SGC will evaluate and analyze water flows from two existing adits. SGC will perform bench scale studies on alternative mine drainage treatment options during 1996 and 1997. SGC will assess the improvement in zinc loading between the Koehler and Longfellow adits and monitoring point M-2 during 1996 and 1997 and will prepare an engineering design for a bio-pass treatment system. At the completion of the studies and reclamation work, SGC will provide $200,000 to a fund as directed by WQCD, which funds will be utilized for water quality improvement or remedial projects to address impacts of past mining in the Upper Animas River basin.

(6) Boulder Creek Mill Tailings - Upstream of confluence of Boulder Creek and Animas River

The tailings will be removed and consolidated with high pH material for stability. The disturbed areas will be revegetated. The consolidated material will be capped and revegetated.

(7) Pride of the West Mill Tailings - Howardsville

The historic tailings will be removed from contact with stream water on the west side of the property. The material removed will be consolidated and the disturbed areas revegetated.

B-3 "B" List - Secondary Projects

(8) Columbus Mine Portal - Animas Forks

A bulkhead will be installed in two adits to prevent direct mine discharge in order to restore the hydrologic regime to near premining conditions.

(9) London Portal - Headwaters of Animas River

A bulkhead will be installed in the adit to prevent direct mine discharge in order to restore the hydrologic regime to near premining conditions.

APPENDIX C
CDPS PERMIT #CO-0044768
Mine Remediation Projects
with Work Plans

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COLORADO DISCHARGE PERMIT SYSTEM (CDPS)

SUMMARY OF RATIONALE

SUNNYSIDE GOLD CORPORATION

MINE REMEDIATION PROJECTS WITH

NO RESIDUAL DISCHARGE FOLLOWING PROJECT COMPLETION

CDPS PERMIT NUMBER CO-0044768, SAN JUAN COUNTY

I. *TYPE OF PERMIT* — *New Permit*

II. *ADMINISTRATIVE INFORMATION*

A. *Facility Type:* — *Mine Dewatering and Milling With No Discharge*
Fee Category: — *Category 03, Subcategory 4*
Category Flow Range: — *No Discharge (At Completion of Remedial Activity)*
Annual Fee: — *$1,519*

B. *SIC Code:* — *1041*

C. *Party Performing Remediation:* — *William Goodhard, Manager*
Sunnyside Gold Corporation
P.O. Box 177
Silverton, CO 81433
(303) 387-5533

E. *Facility Location:*

The mine sites that will be remediated are located in the upper Animas River basin, and are associated with a consent agreement between the permittee and the Water Quality Control Division that is related to the plugging of the American Tunnel mine portal. The permittee has submitted ***Mine Remediation Plans (MRP's)*** *for each site that has been identified to-date, with detailed location information. Any additional sites identified in the future will be described in similar MRP's that will be submitted to the Water Quality Control Division.*

F. *Discharge Point(s):*

The receiving streams and specific locations associated with discharges from individual sites are described in the ***MRP's*** *that have been, or will be, submitted for each waste site.*

III. *DISCHARGES AUTHORIZED BY THIS PERMIT:*

The sites that will be permitted are likely to discharge pollutants to waters of the State as a result of: 1) precipitation falling on top of and then running off the site, 2) surface drainage from other catchment areas flowing across the site, or, 3) short term releases of water held within the sites which may be released during site excavation. Such discharges are subject to regulation as "point sources" through the Colorado Discharge Permit System (CDPS), and are not allowable except as authorized through the issuance of a permit which contains terms and conditions that are developed in compliance with the Colorado Discharge Permit System Regulations (6.1.0).

While the remediation actions will eventually eliminate direct exposure of mine waste to precipitation or surface drainage, and discharges of water stored within the waste will only be temporary and mitigated to the maximum extent practicable, it is necessary to provide permit coverage of all such discharges until the remediation actions have been completed.

It should be noted that one of the remediation actions that will be included in this permit, which involves the chemical adjustment of pooled mine water, does not involve mine waste. That project will accelerate filling of the mine pool and will force final pH equilibrium from a basic pH rather than an acidic pH.

During the implementation of these mine remediation projects, discharges from the American Tunnel or the Terry Tunnel will continue to be subject to CDPS permits No. CO-0027529 or CO-0036056.

The remediation projects that will be covered by this permit are listed below, and are fully described within the permit itself. Each project will be treated as an attachment to the permit, and will be identified as shown below:

Mine Remediation Project	Attachment Abbreviation	Number of Pages
American Tunnel Mine Waste Dump	AT	8
Boulder Creek Tailings Project	BC	7
Columbus Mine Portals Mine Waste Dumps	CM	8
Surface Mill Tailings at Eureka	ET	7
Gold Prince Mill Tailings	GP	10
Longfellow Koehler Mine Waste Project	LK	14
London Mine Portals Waste Dumps	LM	8
Pride of the West Tailings	PW	8
Sunnyside Mine Pool Mitigation - Alkaline Solution Injection	SP	*6*

IV. TERMS AND CONDITIONS OF PERMIT

A. Mine Remediation Plan

Upon beginning remediation work at a site, the permittee is required to fully implement the Mine Remediation Plan (MRP) that has been submitted for that site.

B. Monitoring and Reporting

The permittee is required to perform whatever oversight is necessary to insure that the MRP is being implemented, and shall comply with all monitoring and reporting conditions included in the MRP. At a minimum, monthly reports are required for any water quality data that is collected as part of a MRP. In addition, quarterly reports must be submitted which include: 1) a narrative description of the current status of the remediation project, 2) a summary of analytical results for any sampling that was specified in the MRP for the site in question, 3) a photographic survey of the sites (both pre-remediation waste location and post-remediation waste location) involved in the remediation action. Reports must be received by the 28th day of the month following the calendar quarter or month for which the report is being submitted.

C. Legal Right To Enter

Prior to beginning on-site work for any remediation project, the permittee must submit documentation to the Water Quality Control Division showing that the permittee has been granted permission to enter the property(ies) where work will be carried out.

D. Termination

This mine remediation projects permit may be terminated in accordance with the terms of the Consent Decree when the remediation projects are completed.

V. CHANGES MADE AFTER PUBLIC NOTICE

Three Sunnyside Gold Corporation permits were sent to public notice - CO-0027529, which is for the American Tunnel discharge, CO-0036056, which is for the Terry Tunnel discharge, and CO-0044768, which is for mine remediation projects in the Upper Animas basin. In addition, a related draft Consent Decree that has been negotiated between the Division and the mining company was in the same public notice.

Responses to the public notice were received from private citizens, a committee of members of the Animas River Stakeholders group, several environmental and mining industry oriented groups, several governmental agencies, and the Sunnyside Gold Corporation itself.

Most of the comments received were related to the consent decree, which is being dealt with separately from the discharge permits.

With respect to this discharge permit, the following issues were raised:

1) ***Comment:*** *The CDPS permits must function as stand alone documents, regardless of the existence of the consent decree.*

 Response: *The permits were reviewed to find any terms or conditions that through reference were dependent upon the contents of the consent decree. Where such permit conditions were found, they were revised to more explicitly describe the intended permit requirements. However, there is one exception to this that should be noted. Each draft permit included a termination clause which referred directly back to the consent decree. While this clause was modified to additionally require compliance with State permit regulations, it was determined that it would not be practical to include the consent decree's conditions related to permit termination within the permits themselves. Also, the termination clauses do not affect the enforceability of the permits. For these reasons, the termination clauses' references to the consent decree were retained.*

2) ***Comment:*** *The draft permit for Mine Remediation Projects should include criteria for what must be included in a Mine Remediation Plan (MRP). Such criteria should be similar to those that have been developed for the draft General Permit for Stormwater Discharges Associated with Metal Mining Operations and Mine-Waste Remediation (Permit Number COR-040000, Parts I.C.1. - I.C.6), with particular emphasis on erosion control during and after the project.*

Response: *The Mine Remediation permit has been revised to incorporate criteria which are very similar to the requirements of the above-referenced sections of the General Permit for Stormwater.*

3) ***Comment:*** *The Mine Remediation permit should include other Storm Water Management Plan conditions of the General Permit for Stormwater that are related to plan preparation, implementation, retention, submittal, review and approval, plan changes, non-stormwater discharges, inspections, SWMP availability, and procedures for covering additional projects.*

Response: *The Mine Remediation permit has been written as an individual permit instead of a general permit, and must be amended to include any additional MRP's or modify MRP's. Also, this Mine Remediation Permit was intended to cover more than just stormwater discharges. Because of these differences, the suggested changes were determined by the Division to be inappropriate.*

4) ***Comment:*** *For those projects were adits are present, requirements related to adit closure or treatment should be added*

Response: *In those cases were adits are present, the receiving streams have been classified such that there is no need for treatment of adit flows, provided the activities of the permittee do not increase the loading of pollutants from such discharges. In all cases, the permittee has submitted MRP's that either will not affect adit discharges, or will reduce or eliminate pollutant the loading of pollutants being discharged.*

Rich Horstmann
May 2, 1996

Permit No.: CO-0044768
County: San Juan

AUTHORIZATION TO DISCHARGE UNDER THE

COLORADO DISCHARGE PERMIT SYSTEM

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act") the

SUNNYSIDE GOLD CORPORATION

is authorized, when certified by the Water Quality Control Division, to discharge from

Mine Remediation Projects
With No Residual Discharge Following Project Completion

located within the **upper Animas River basin**, as listed in this permit, into with the State Water Quality Control Division, and in accordance with effluent limitations, monitoring requirements and other conditions set forth in Part I and II hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

The applicant may demand an adjudicatory hearing within thirty (30) days of the issuance of the final permit determination, per the Regulations for the State Discharge Permit System, 6.8.0 (1). Should the applicant choose to contest any of the effluent limitations, monitoring requirements or other conditions contained herein, the applicant must comply with Section 24-4-104 CRS and the Regulations for the State Discharge Permit System. Failure to contest any such effluent limitation, monitoring requirement, or other condition, constitutes consent to the condition by the Applicant.

This permit and the authorization to discharge shall expire at midnight, **May 31, 2001**.

Issued and Signed this 6th day of May, 1996

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

J. David Holm, Director
Water Quality Control Division

Permit No. CO-0044768

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PART I

A. TERMS AND CONDITIONS

1. Authorization to Discharge

Beginning no later than the effective date of this general permit and lasting through **May 31, 2001,** the permittee is authorized to discharge from mine waste remediation projects with no residual discharge following project completion. The specific locations and outfalls associated with these projects are described in the attachments to this permit, according to the following listing:

Mine Remediation Project	Attachment Abbreviation	Number of Pages
American Tunnel Mine Waste Dump	AT	8
Boulder Creek Tailings Project	BC	7
Columbus Mine Portals Mine Waste Dumps	CM	8
Surface Mill Tailings at Eureka	ET	7
Gold Prince Mill Tailings	GP	10
Longfellow Koehler Mine Waste Project	LK	14
London Mine Portals Waste Dumps	LM	8
Pride of the West Tailings	PW	8
Sunnyside Mine Pool Mitigation - Alkaline Solution Injection	SP	6

2. Mine Remediation Plan (MRP) - Definition, Development

A Mine Remediation Plan (MRP) has been developed for each of the sites listed above. Similar plans shall be developed for any additional site that is later desired by the permittee to be covered by this permit. The MRP shall be prepared in accordance with good engineering practices. (The plan need not be completed by a registered engineer.) The plan shall identify potential sources of pollution (including sediment) which may reasonably be expected to affect the quality of discharges associated with the mining operation. In addition, the plan shall describe and ensure the implementation of best management practices (BMPs) which will be used to reduce the pollutants in discharges associated with the inactive mining operation.

The MRP's that have already been submitted include, and any future ones will have to include, the following items, at a minimum:

a. Description of Mining Activities

To the extent that the permittee is knowledgeable, the plan shall provide a narrative description of the mining and associated activities that took place at the site. The narrative description shall report the approximate dates of operation, the total acreage within the mine site and an estimate of the number of acres of disturbed area. A general description of the location of the mining site relative to major transportation routes and communities shall also be provided.

b. **Site Map**

Each plan shall provide a generalized site map or maps indicating all of the following, where applicable:
- mining/milling site boundaries and access and haul roads;
- areas used for storage of overburden, materials, soils, tailings or wastes;
- areas used for outdoor manufacturing, storage or disposal of materials;
- tailings piles and ponds;
- an estimate of the direction(s) of flow;
- existing structural control measures to reduce pollutants in stormwater runoff; and
- springs, streams, wetlands and other surface waters.

c. **Stormwater Management Controls - Identification of Sources and Best Management Practices During Progress of Remedial Action**

The MRP shall identify potential sources of pollutants at the site and assess the potential of these sources to contribute pollutants to stormwater discharges during the progress of the remedial action. The MRP must also describe appropriate Best Management Practices (BMPs) to reduce the potential of these sources to contribute pollutants to stormwater discharges. The appropriateness and priorities of controls in the plan shall reflect identified potential sources of pollutants at the mining site. The description of the BMPs shall include:

i. **Stormwater diversion**: Describe how and where stormwater will be diverted away from potential pollutant sources to prevent stormwater contamination.

ii. **Sediment and erosion prevention**: Describe practices that will be used to reduce erosion and prevent sediment delivery to State waters. These could include structural (such as silt fences, sediment ponds, drop structures, check dams) and non-structural (such as mulching and revegetation) methods.

d. **Comprehensive Inspection and Record Keeping Procedures**

The MRP shall identify qualified personnel that shall inspect designated areas. The Division will at any time have the right to inspect a remediation site after remediation work has begun, or the property owner has granted permission to the Division to enter the property. Upon request by the permittee, the Division will request that the State Division of Minerals and Geology (DMG) inspect any of the mitigation projects to determine whether the reclamation work has been completed in accordance with the reclamation standards of DMG and the MRPs.

e. **Additional MRP Items**

i. **Legal Right to Enter Property**: Prior to beginning on-site work for any remediation project, the permittee must submit documentation to the Water Quality Control Division showing that the permittee has been granted permission to enter the property(ies) where work will be carried out. If possible, such documentation should be included in the MRP for a site.

ii. **Photographs**: The plan should include photographs documenting the condition of the inactive mine site before any remedial action has occurred. If not included in the plan, such photographs must be submitted as part of the first regular monitoring report submitted for a site.

iii). **Description of Remedial Action**: The plan shall describe the remedial action that will take place to minimize or eliminate the water quality impacts from the mine waste. The description shall include:
- Remediation Goal Statement;
- the characteristics of the mineralogic content of the mine-waste, and volume of the waste;
- description of any materials that will be mixed into the mine waste on site; and
- estimated volume and surface area of the final site, and estimated angle of side slopes.

iv). **Discharges Other Than Stormwater**: For discharges other than stormwater, such as water ponded on a mine site or encountered within mine waste, such discharges must be treated or controlled such that the loading to the receiving stream is no greater than that which was occurring prior to commencement of the remedial action.

v). **Description of permanent BMPs, final site stabilization, and potential land use**: The plan shall include a description of the specific measures that will be installed or used at the mine-waste site. The description shall include any of the following if appropriate: specifications for capping or isolation of the mine-waste, method and type of revegetation, and other permanent BMPs. The plan shall also include a description of the potential land use after remediation is complete.

f. **Consistency with Other Plans**

MRPs may reflect requirements for Spill Prevention Control and Countermeasure (SPCC) plans under section 311 of the CWA, or Best Management Practices (BMPs) Programs otherwise required by a CDPS permit, and may incorporate any part of such plans into the MRP by reference. The MRP may rely upon information contained in approved plans submitted for other similar pollution control programs, including the Voluntary Clean Up Program. (Voluntary Cleanup and Redevelopment Act, CRS 25-16-303).

3. **Implementation of Mine Remediation Plan**

Upon beginning remediation work at a site The permittee is required to fully implement the Mine Remediation Plan (MRP) for each project that is described in the attachments to this permit.

4. **Oil and Grease, and Floating Solids Monitoring and Control**

In the event an oil sheen or floating oil, or floating solids, are observed in any discharge from a mine waste remediation site, all practicable measures must be taken in order to identify and eliminate the source of the sheen or floating solids.

5. **Monitoring and Reporting**

The permittee is required to perform whatever oversight is necessary to insure that the MRP is being implemented, and shall comply with all monitoring and reporting conditions included in the MRP. At a minimum, monthly reports are required for any water quality data that is collected as part of a MRP. In addition, quarterly reports must be submitted which include: 1) a narrative description of the current status of the remediation project, 2) a summary of analytical results for any sampling that was specified in the MRP for the site in question, 3) a photographic survey of the sites (both pre-remediation waste location and post-remediation waste location) involved in the remediation action. Reports must be received by the 28th day of the month following the calendar quarter or month for which the report is being submitted

B. SPECIAL REQUIREMENTS

1. **Materials Containment**

Any hazardous materials or chemicals permanently stored or used on site (including fuels, lubricants, hazardous soil amendment materials and hazardous fertilizers) shall be adequately handled and contained to prevent any spills from occurring. Earthen dikes or concrete basins with capacity to hold contents of storage tanks or containers shall be used to prevent spills of these materials into State Waters in the event of failure of the storage containers.

C. GENERAL MONITORING, SAMPLING AND REPORTING REQUIREMENTS

1. Routine Reporting

Reports submitted in compliance with the terms and conditions of this permit shall be submitted on a **quarterly** basis, except for water quality data, which shall be submitted on a **monthly basis**, and shall be mailed to the agencies listed below so they are received no later than the 28th day of the month following the end of each calendar quarter, or, for monthly reports, the no later than the 28th day of the month following the month for which the report is being submitted.

The **original** signed copy of each report shall be submitted to the Division at the following address:

Colorado Department of Public Health and Environment
WQCD-PE-B2
4300 Cherry Creek Drive South
Denver, Colorado 80222-1530

A **duplicate** signed copy of each monitoring report shall be submitted to the following agency:

U.S. Environmental Protection Agency (8ENF-T)
Office of Enforcement, Compliance Assistance and Environmental Justice
Technical Enforcement Program
999 18th Street, Suite 500
Denver, CO 80202-2466

2. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and approval by the Division.

If the permittee monitors at the point of discharge any pollutant limited by the permit more frequently than required by the permit, using approved test procedures or as specified in the permit, the result of this monitoring shall be included in the calculation and reporting of data to the Division.

3. Analytical and Sampling Methods for Monitoring

The permittee shall install, calibrate, use and maintain monitoring methods and equipment, including biological and indicated pollutant monitoring methods. All sampling shall be performed by the permittee according to specified methods in 40 C.F.R. Part 136; methods approved by EPA pursuant to 40 C.F.R. Part 136; or methods approved by the Division, in the absence of a method specified in or approved pursuant to 40 C.F.R. part 136. **The analytical method selected for a parameter shall be the one that can measure the lowest detected limit for that parameter unless the permit limitation or stream standard for those parameters not limited, is within the testing range of another approved method.** When requested in writing, the Division may approve an alternative analytical procedure or any significant modification to an approved procedure.

When the most sensitive analytical method which complies with this part, has a detection limit greater than or equal to the permit limit, the permittee shall report "less than (the detectable limit)," as appropriate. Such reports shall not be considered as violations of the permit limit.

The present lowest method detection limits for specific parameters (which have limitations which are, in some cases, less than or equal to the detection limit) are as follows:

Arsenic	0.01 mg/ℓ
Benzene	0.001 mg/ℓ
Total Residual Chlorine	0.05 mg/ℓ
Cadmium	0.001 mg/ℓ
Chromium	0.01 mg/ℓ
Chromium, Hexavalent	0.01 mg/ℓ
Copper	0.005 mg/ℓ
Lead	0.005 mg/ℓ
Total Mercury	0.00025 mg/ℓ
Nickel	0.05 mg/ℓ
Selenium	0.01 mg/ℓ
Silver	0.0002 mg/ℓ
Zinc	0.01 mg/ℓ

These limits apply to the total recoverable or the potentially dissolved fraction of metals.

For hexavalent chromium, samples must be unacidified so that dissolved concentrations will be measured rather than potentially dissolved concentrations. Procedure for determining settleable solids is contained in 40 CFR 434.64. The method detection limit for measuring settleable solids under this part shall be 0.4 ml/l.

4. **Records**

The permittee shall establish and maintain records. Those records shall include the following:

a. The date, type, exact location, and time of sampling or measurements;
b. The individual(s) who performed the sampling or measurements;
c. The date(s) the analyses were performed;
d. The individual(s) who performed the analyses;
e. The analytical techniques or methods used;
f. The results of such analyses; and
g. Any other observations which may result in an impact on the quality or quantity of the discharge as indicated in 40 CFR 122.44 (I)(1)(iii).

The permittee shall retain for a minimum of three (3) years records of all monitoring information, including all original strip chart recordings for continuous monitoring instrumentation, all calibration and maintenance records, copies of all reports required by this permit and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the Division or EPA.

5. **Signatory and Certification Requirements**

a. All reports and other information required by the Division, shall be signed and certified for accuracy by the permittee in accord with the following criteria:

(1) In the case of corporations, by a principal executive officer of at least the level of vice-president or his or her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the form originates;

(2) In the case of a partnership, by a general partner;

(3) In the case of a sole proprietorship, by the proprietor;

(4) In the case of a municipal, state, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

b. All reports required by permits, and other information requested by the Division shall be signed by a person as described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described above;

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and,

(3) The written authorization is submitted to the Division.

If an authorization as described in this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this section must be submitted to the Division prior to or together with any reports, information, or applications to be signed by an authorized representative.

The permittee, or the duly authorized representative shall make and sign the following certification on all such documents:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

A. NOTIFICATION REQUIREMENTS

1. Notification to Parties

All notification requirements under this section shall be directed as follows:

a. Oral Notifications, other than for spills, during normal business hours shall be to:

Permits and Enforcement Section
Water Quality Control Division
Telephone : (303) 692-3590

Spills notifications at any time and other notifications after hours shall be to :

Emergency Response Unit
Office of the Environment
Telephone No.: (303)-756-4455

b. Written notification shall be to:

Industrial Permits and Enforcement Program
Colorado Department of Public Health and Environment
WQCD-PE-B2
4300 Cherry Creek Drive South
Denver, Colorado 80222

2. Change in Discharge

The permittee shall notify the Division, in writing, of any planned physical alterations or additions to the permitted facility. Notice is required only when:

a. The alteration or addition could significantly change the nature or increase the quantity or pollutants discharged; or

b. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported pursuant to an approved land application plan.

The permittee shall give advance notice to the Division of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

Whenever notification of any planned physical alterations or additions to the permitted facility is required pursuant to this section,, the permittee shall furnish the Division such plans and specifications which the Division deems reasonably necessary to evaluate the effect on the discharge, the stream, or ground water. If the Division finds that such new or altered discharge might be inconsistent with the conditions of the permit, the Division shall require a new or revised permit application and shall follow the procedures specified in Sections 6.6.0 through 6.7.0, and 6.16.0 of the Regulations for the State Discharge Permit System.

3. **Special Notifications - Definitions**

 a. Bypass: The intentional diversion of waste streams from any portion of a treatment facility.

 b. Severe Property Damage: Substantial physical damage to property at the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. It does not mean economic loss caused by delays in production.

 c. Spill: An incident in which flows or solid materials are accidentally or unintentionally allowed to flow or escape so as to be lost from the treatment, processing or manufacturing system which may cause or threaten pollution of state waters.

 d. Upset: An exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

4. **Noncompliance Notification**

 a. If, for any reason, the permittee does not comply with or will be unable to comply with any discharge limitations or standards specified in this permit, the permittee shall, at a minimum, provide the Division and EPA with the following information:

 (1) A description of the discharge and cause of noncompliance;

 (2) The period of noncompliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance; and

 (3) Steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

 b. The permittee shall report the following circumstances **orally within twenty-four (24) hours** from the time the permittee becomes aware of the circumstances, and shall mail to the Division a written report containing the information requested in Part II.A.3 (a) **within five (5) days** after becoming aware of the following circumstances:

 (1) Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;

 (2) Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;

 (3) Circumstances leading to any upset or spill which causes an exceedance of any effluent limitation in the permit;

 (4) Daily maximum violations for any of the pollutants limited by PART I.A of this permit and specified as requiring 24 hour notification. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.

 c. The permittee shall report instances of non-compliance which are not required to be reported within 24-hours at the time Discharge Monitoring Reports are submitted. The reports shall contain the information listed in sub-paragraph (a) of this section.

5. **Other Notification Requirements**

 Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit shall be submitted no later than fourteen (14) days following each scheduled date, unless otherwise provided by the Division.

 The permittee shall notify the Division, in writing, thirty (30) days in advance of a proposed transfer of permit as provided in Part II.B.3. The permittee's notification of all anticipated noncompliance does not stay any permit condition.

6. **Bypass Notification**

If the permittee knows in advance of the need for a bypass, a notice shall be submitted, at least ten days before the date of the bypass, to the Division. The bypass shall be subject to Division approval and limitations imposed by the Division. Violations of requirements imposed by the Division will constitute a violation of this permit.

7. **Upsets**

a. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of paragraph (b) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

b. Conditions Necessary for a Demonstration of Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the specific cause(s) of the upset; and

(2) The permitted facility was at the time being properly operated and maintained; and

(3) The permittee submitted proper notice of the upset as required in Part II.A.4. of this permit (24-hour notice); and

(4) The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reason able likelihood of adversely affecting human health or the environment.

In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

c. Burden of Proof

In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

8. **Discharge Point**

Any discharge to the waters of the State from a point source other than specifically authorized by this permit is prohibited.

9. **Proper Operation and Maintenance**

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when necessary to achieve compliance with the conditions of the permit.

10. **Minimization of Adverse Impact**

The permittee shall take all reasonable steps to minimize or prevent any discharge of sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. As necessary, accelerated or additional monitoring to determine the nature and impact of the noncomplying discharge is required.

11. Removed Substances

Solids, sludges, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed in accordance with applicable state and federal regulations.

For all domestic wastewater treatment works, at industrial facilities, the permittee shall dispose of sludge in accordance with all State and Federal regulations.

12. Submission of Incorrect or Incomplete Information

Where the permittee failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or report to the Division, the permittee shall promptly submit the relevant information which was not submitted or any additional information needed to correct any erroneous information previously submitted

13. Bypass

a. Bypasses are prohibited and the Division may take enforcement action against the permittee for bypass, unless:

(1) The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There were no feasible alternatives to bypass such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(3) Proper notices were submitted in compliance with Part II.A.4.

b. "Severe property damage" as used in this Subsection means substantial physical damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

c. The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance or to assure optimal operation. These bypasses are not subject to the provisions of paragraph (a) above.

d. The Division may approve an anticipated bypass, after considering adverse effects, if the Division determines that the bypass will meet the conditions specified in paragraph (a) above.

14. Reduction, Loss, or Failure of Treatment Facility

The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production, control sources of wastewater, or all discharges, until the facility is restored or an alternative method of treatment is provided. This provision also applies to power failures, unless an alternative power source sufficient to operate the wastewater control facilities is provided.

It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

B. RESPONSIBILITIES

1. Inspections and Right to Entry

The permittee shall allow the Division and/or the authorized representative, upon the presentation of credentials:

a. To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit and to inspect any monitoring equipment or monitoring method required in the permit; and

c. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect and/or investigate, any actual, suspected, or potential source of water pollution, or to ascertain compliance or non compliance with the Colorado Water Quality Control Act or any other applicable state or federal statute or regulation or any order promulgated by the Division. The investigation may include, but is not limited to, the following: sampling of any discharge and/or process waters, the taking of photographs, interviewing of any person having knowledge related to the discharge permit or alleged violation, access to any and all facilities or areas within the permittee's premises that may have any affect on the discharge, permit, or alleged violation. Such entry is also authorized for the purpose of inspecting and copying records required to be kept concerning any effluent source.

d. The permittee shall provide access to the Division to sample the discharge at a point after the final treatment process but prior to the discharge mixing with state waters upon presentation of proper credentials.

In the making of such inspections, investigations, and determinations, the Division, insofar as practicable, may designate as its authorized representatives any qualified personnel of the Department of Agriculture. The Division may also request assistance from any other state or local agency or institution.

2. Duty to Provide Information

The permittee shall furnish to the Division, within a reasonable time, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit.

3. Transfer of Ownership or Control

a. Except as provided in paragraph b. of this section, a permit may be transferred by a permittee only if the permit has been modified or revoked and reissued as provided in Section 6.9.8 of the Regulations for the State Discharge Permit System, to identify the new permittee and to incorporate such other requirements as may be necessary under the Federal Act.

b. A permit may be automatically transferred to a new permittee if:

(1) The current permittee notifies the Division in writing 30 days in advance of the proposed transfer date; and

(2) The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them; and

(3) The Division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.

(4) Fee requirements of the Regulations for the State Discharge Permit System, Section 6.16.0 have been met.

4. Availability of Reports

Except for data determined to be confidential under Section 308 of the Federal Clean Water Act and Regulations for the State Discharge Permit System 5 CCR 1002-2, 6.6.4, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division and the Environmental Protection Agency.

The name and address of the permit applicant(s) and permittee(s), permit applications, permits and effluent data shall not be considered confidential. Knowingly making false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Clean Water Act, and Section 25-8-610 C.R.S.

5. **Modification, Suspension, Revocation, or Termination of Permits By the Division**

The filing of a request by the permittee for a permit modification, revocation and reissuance,termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

a. A permit may be modified, suspended, or terminated in whole or in part during its term for reasons determined by the Division including, but not limited to, the following:

(1) Violation of any terms or conditions of the permit;

(2) Obtaining a permit by misrepresentation or failing to disclose any fact which is material to the granting or denial of a permit or to the establishment of terms or conditions of the permit; or

(3) Materially false or inaccurate statements or information in the permit application or the permit.

(4) A determination that the permitted activity endangers human health or the classified or existing uses of state waters and can only be regulated to acceptable levels by permit modifications or termination.

b. A permit may be modified in whole or in part for the following causes, provided that such modification complies with the provisions of Section 6.11.0 of the Regulations for the State Discharge Permit System:

(1) There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

(2) The Division has received new information which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of different permit conditions at the time of issuance. For permits issued to new sources or new dischargers, this cause includes information derived from effluent testing required under Section 6.5.7(5) of the Regulations for the State Discharge Permit System. This provision allows a modification of the permit to include conditions that are less stringent than the existing permit only to the extent allowed under Section 6.11.0 of the Regulations for the State Discharge Permit System.

(3) The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued. Permits may be modified during their terms for this cause only as follows:

(a) The permit condition requested to be modified was based on a promulgated effluent limitation guideline, EPA approved water quality standard, or an effluent limitation set forth in 5 CCR 1002-3, § 10.1.0 et seq.; and

(b) EPA has revised, withdrawn, or modified that portion of the regulation or effluent limitation guideline on which the permit condition was based, or has approved a Commission action with respect to the water quality standard or effluent limitation on which the permit condition was based; and

(c) The permittee requests modification after the notice of final action by which the EPA effluent limitation guideline, water quality standard, or effluent limitation is revised, withdrawn, or modified; or

(d) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA promulgated regulations or effluent limitation guidelines, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based and a request is filed by the permittee in accordance with this Regulation, within ninety (90) days of judicial remand.

(4) The Division determines that good cause exists to modify a permit condition because of events over which the permittee has no control and for which there is no reasonable available remedy.

(5) The permittee has received a variance.

(6) When required to incorporate applicable toxic effluent limitation or standards adopted pursuant to § 307(a) of the Federal act.

(7) When required by the reopener conditions in the permit.

(8) As necessary under 40 C.F.R. 403.8(e), to include a compliance schedule for the development of a pretreatment program.

(9) When the level of discharge of any pollutant which is not limited in the permit exceeds the level which can be achieved by the technology-based treatment requirements appropriate to the permittee under Section 6.9.2(1) of the Regulations for the State Discharge Permit System.

(10) To establish a pollutant notification level required ~~in~~ Section 6.9.5 of the Regulations for the State Discharge Permit System.

(11) To correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions, to the extent allowed in Section 6.11.0 of the Regulations for the State Discharge Permit System.

(12) When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

(13) For any other cause provided in Section 6.11.0 of the Regulations for the State Discharge Permit System.

c. At the request of a permittee, the Division may modify or terminate a permit and issue a new permit if the following conditions are met:

(1) The Regional Administrator has been notified of the proposed modification or termination and does not object in writing within thirty (30) days of receipt of notification,

(2) The Division finds that the permittee has shown reasonable grounds consistent with the Federal and State statutes and regulations for such modifications or termination;

(3) Requirements of Section 6.16.0 of the Regulations for the State Discharge Permit System have been met, and

(4) Requirements of public notice have been met.

d. Permit modification (except for minor modifications), termination or revocation and reissuance actions shall be subject to the requirements of Sections 6.6.2, 6.6.3, 6.7.0, 6.8.0 and 6.16.0 of the Regulations for the State Discharge Permit System. The Division shall act on a permit modification request, other than minor modifications requests, within 180 days of receipt thereof. Except for minor modifications, the terms of the existing permit govern and are enforceable until the newly issued permit is formally modified or revoked and reissued following public notice.

e. Upon consent by the permittee, the Division may make minor permit modifications without following the requirements of Sections 6.6.2, 6.6.3, 6.8.0, and 6.16.0 of the Regulations for the State Discharge Permit System. Minor modifications to permits are limited to:

(1) Correcting typographical errors; or

(2) Increasing the frequency of monitoring or reporting by the permittee; or

(3) Changing an interim date in a schedule of compliance, provided the new date of compliance is not more than 120 days after the date specific in the existing permit and does not interfere with attainment of the final compliance date requirement; or

(4) Allowing for a transfer in ownership or operational control of a facility where the Division determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees has been submitted to the Division; or

(5) Changing the construction schedule for a discharger which is a new source, but no such change shall affect a discharger's obligation to have all pollution control equipment installed and in operation prior to discharge; or

(6) Deleting a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits.

f. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term.

g. The filing of a request by the permittee for a permit modification, revocation and reissuance or *termination does not stay* any permit condition.

h. All permit modifications and reissuances are subject to the antibacksliding provisions set forth in 6.11.0 (5) through (9).

6. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the Clean Water Act.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority granted by Section 510 of the Clean Water Act.

8. Permit Violations

Failure to comply with any terms and/or conditions of this permit shall be a violation of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

9. Property Rights

The issuance of this permit does not convey any property or water rights in either real or personal property, or stream flows, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. Severability

The provisions of this permit are severable. If any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances and the application of the remainder of this permit shall not be affected.

11. Renewal Application

If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least one hundred eighty (180) days before this permit expires. If the permittee anticipates there will be no discharge after the expiration date of this permit, the Division should be promptly notified so that it can terminate the permit in accordance with Part II.B.5.

12. Confidentiality

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Commission or the Division, but shall be kept confidential. Any person seeking to invoke the protection of this Subsection (12) shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

13. Fees

The permittee is required to submit payment of an annual fee as set forth in the 1983 amendments to the Water Quality Control Act. Section 25-8-502 (1) (b), and State Discharge Permit Regulations 5 CCR 1002-2, Section 6.16.0 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S. 1973 as amended.

14. Duration of Permit

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications.

15. Section 307 Toxics

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the Division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

16. Antibacksliding

a. A permit may not be renewed, reissued, or modified to contain effluent limitations adopted pursuant to Section 25-8-503(1)(b) (BPJ) of the Water Quality Control Act, which are less stringent than the comparable effluent limitations or standards in the previous permit, unless any one of the following exceptions is met and the conditions of paragraph (c) of this section are met:

(1) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of less stringent effluent limitations; or

(2) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation or standard at the time of permit issuance; or

(3) The Division determines that technical mistakes or mistaken interpretations of law were made in issuing the permit, which justified relaxation of the effluent limitations or standards; or

(4) A less stringent effluent limitation or standard is necessary because of events over which the permittee has no control and for which there is not reasonable available remedy; or

(5) The permittee has received a permit variance; or

(6) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case, the limitations in the renewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

b. A permit may not be renewed, reissued, or modified to contain effluent limitations adopted pursuant to 6.9.2(2) or (3) of the Regulations for the State Discharge Permit System that are less stringent than the comparable effluent limitations in the previous permit, unless any of the exceptions provided herein is met and the conditions of paragraph (c) of this section are met.

(1) In waters where the applicable water quality standard has not yet been attained, effluent limitations based on a total maximum daily load or other waste load allocation may be revised to be less stringent if the cumulative effect of all such revisions assures attainment of such water quality standard, or the designated use which is not being attained is removed in accordance with Section 3.1.6 of the Basic Standards.

(2) In waters where the applicable water quality standard has been attained, effluent limitations based on a total maximum daily load, other waste load allocation, or any other permitting standard (including any water quality standard) may be revised to be less stringent if such revision is subject to and consistent with the antidegradation provisions of Section 3.1.8 of the Basic Standards. Consistency with Section 3.1.8 shall be presumed if the waters in question have been designated by the Commission as "use protected"; or

(3) Whether or not the applicable water quality standard has been attained:

(a) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justified the application of less stringent effluent limitations; or

(b) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is not reasonable available remedy; or

(c) The permittee has received a permit variance; or

(d) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case, the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

c. In no event may a permit with respect to which paragraphs (a) and (b) of this section apply be renewed, reissued, or modified to contain an effluent limitation or standard which is less stringent than required by federal effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into state waters be renewed, reissued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of an applicable water quality standard.

17. Effect of Permit Issuance

a. The issuance of a permit does not convey any property rights or any exclusive privilege.

b. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.

c. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 6.9.8 of the Regulations for the State Discharge Permit System.

d. Compliance with a permit condition which implements a particular standard for sewage sludge use or disposal shall be an affirmative defense in any enforcement action brought for a violation of that standard for sewage sludge use or disposal.

Mine Remediation Plan: American Tunnel Mine Waste Dump

Remediating Party: Sunnyside Gold Corporation
P.O. Box 177
Silverton, CO 81433

contact: William B. Goodhard
Resident Manager

1. Description of Mining Activities

Physical Description of Conditions

The mine waste dump and underlying tailings, located on the north side of the South Fork of Cement Creek, was estimated to total approximately 80,000 cubic yards prior to 1994 removal work. The dump was comprised of waste generated during the mining at Sunnyside and underlying the waste dump was an old historic tailings pond from another facility. Due to the proximity to the creek and groundwater, SGC believes that the underlying tailings removal and the removal of mine waste material and protection from percolation of rain and snow waters was the best remediation technique. This project was an unanticipated extension of the tailings removal action near the American Tunnel, first begun in 1991, on the south side of the South Fork of Cement Creek. See attached pre project monitoring and site characterization information.

General Description of the Mining Site

The Mine Waste Dump Site was located at the American Tunnel 7.2 miles north of Silverton on Colorado State Highway 110. Total acreage of disturbance was 3.64 acres prior to project implementation. See the attached map.

Identification of Lands

Surface waste dump at the American Tunnel site of Sunnyside Gold Corporation (SGC). Lands are included within Mined Land Reclamation Permit #M-77-378 boundary. Lands are included in SGC's Stormwater Permit #COR-040052 identified as American Tunnel. Lands are located at Gladstone, San Juan County, Colorado. See attached map and site map.

Latitude 37 degrees 53 minutes Longitude 107 degrees 39 minutes

Identification of the Waters of the United States Potentially Affected

South Fork of Cement Creek above the confluence with Cement Creek. Cement Creek flows into the Animas River at Silverton Colorado. See attached map.

2. Site Map

Attached

3. Stormwater Management Controls

Necessary Stormwater Management Controls were improved or installed as a part task of this project. The controls consisted of catchments built of hay bales along potential flow paths to catch any sediments.

4. Inspection and Record Keeping Procedures

The Manager or a member of the Technical Service Department inspected this project during removal and revegetation. Ongoing inspections and reporting will continue. Reports will be sent to both the Colorado Division of Minerals and Geology and the Water Quality Control Division.

5. Mine Remediation Plan

Legal Right to Enter and Conduct Activities

This project falls within the boundaries of SGC's MLR permit area. It includes lands that are privately owned and controlled by SGC through ownership or historic easements. This Project is also permitted through Water Quality Control Division by Stormwater Permit # COR-040052.

Remedial Goals and Objectives

Continue to improve both reclamation plan and stormwater management plan to minimize impacts to Cement Creek.

Site Loading Estimate

For all of the remediation projects, and based on limited information, the site loading estimate for each project site was based on the following methodology:

Adits-

Using available data, zinc loading was calculated based on the average flow and average zinc values.

Mine Waste Dumps and Tailings Piles-

Site composite soil samples were tested using a water bath extraction. This test consists of exposing a 1:1 ratio by weight of material to deionized water. The mixture is briefly mixed then allowed to set for 30 minutes. The sample was then filtered (0.45 micron) and analyzed for metals.

Annualized loading was calculated using rainfall data (proportionally adjusted for site elevation between the Silverton and Red Mountain weather stations), exposed area of waste dump or tailings site and loading based on 1:1 water bath test results. For comparison to adit flow loadings projects, the annualized loading was converted to an average daily loading.

Based on these assumptions and procedures, SGC estimates that the average daily loading for this site have been as much as 8.0 pounds of dissolved zinc per day. SGC is under no obligation to defend these estimates and they should only be used as an estimate. SGC does not represent that its mitigation project at this site will remove any specific percentage of metals loading from this site: the loading estimate contained herein does not form the basis of an enforceable permit obligation.

Description of Project

The initial reclamation plan for the waste dump was to regrade the dump, cover with soil and plant. Due to underlying tailings, SGC believes that it is best to remove the tailings to a more stable environment and therefore proposes to move the tailings and the waste dump material required to access the tailings to Tailings Pond #4 for consolidation. This has been the procedure to date; as of the end of 1995, a total of 90,200 cubic yards had been shipped. The material was pH adjusted to near neutral by lime addition at the pond.. The material is similar in acid base potential and metal content with the tailings pond material.

All tailings encountered during excavation were removed, the waste dump remaining after tailings removal was feathered in to match the existing county road, the slopes were capped with a minimum of 16" of soil, the flat area was amended for direct revegetation, planted and mulched. Upland diversions will be improved to ensure that surface water flows are diverted away from the remaining material. Initial work on the waste dump removal project was started in 1994 as part of permitted work under SGC's MLR permit and SGC's stormwater permit. SGC considers the removal of tailings pile material to be authorized under the currently existing MLR permit.

Removal of the tailings pile portion of this project was scheduled for 1995. In 1995, 57,000 cubic yards were hauled, for a project total 90,200 cubic yards, to Tailings Pond #4 at the Mayflower Mill. The removal portion of this project is complete. The salvaged soils were spread over the hill side, limestone was added to neutralize the soil and the area was seeded and mulched according to SGC's MLR Permit reclamation plan.

Analysis

Removal of waste dump material and underlying historic tailings from potential contact with water and consolidation with tailings at the Mayflower Tailings Pond #4 is a Best Management Technique as is vegetating any material left onsite coupled with upland diversions. This project should continue to improve the South Fork of Cement Creek as did the 1991 removal of the historic tailings pond.

Monitoring

Ongoing monitoring of the South Fork of Cement Creek below the site at the American Tunnel, which is required by SGC's MLR Permit, will continue until released from MLR permit obligations.

Budget

SGC will fund this program.

Description of Land Uses

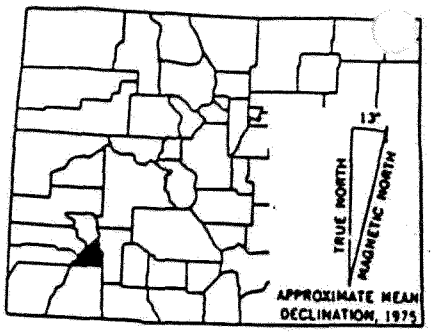
This remediation work plan is intended to use Best Management Practices on the site to conform with surrounding land use policies for:

1) Land stabilization, limited rangeland and limited wildlife habitat to approximately resemble a mountain park ecosystem consistent with bordering undisturbed areas.

2) The conversion of facilities, usable for purposes other than mining, to alternate uses and preserve facilities of historic interest.

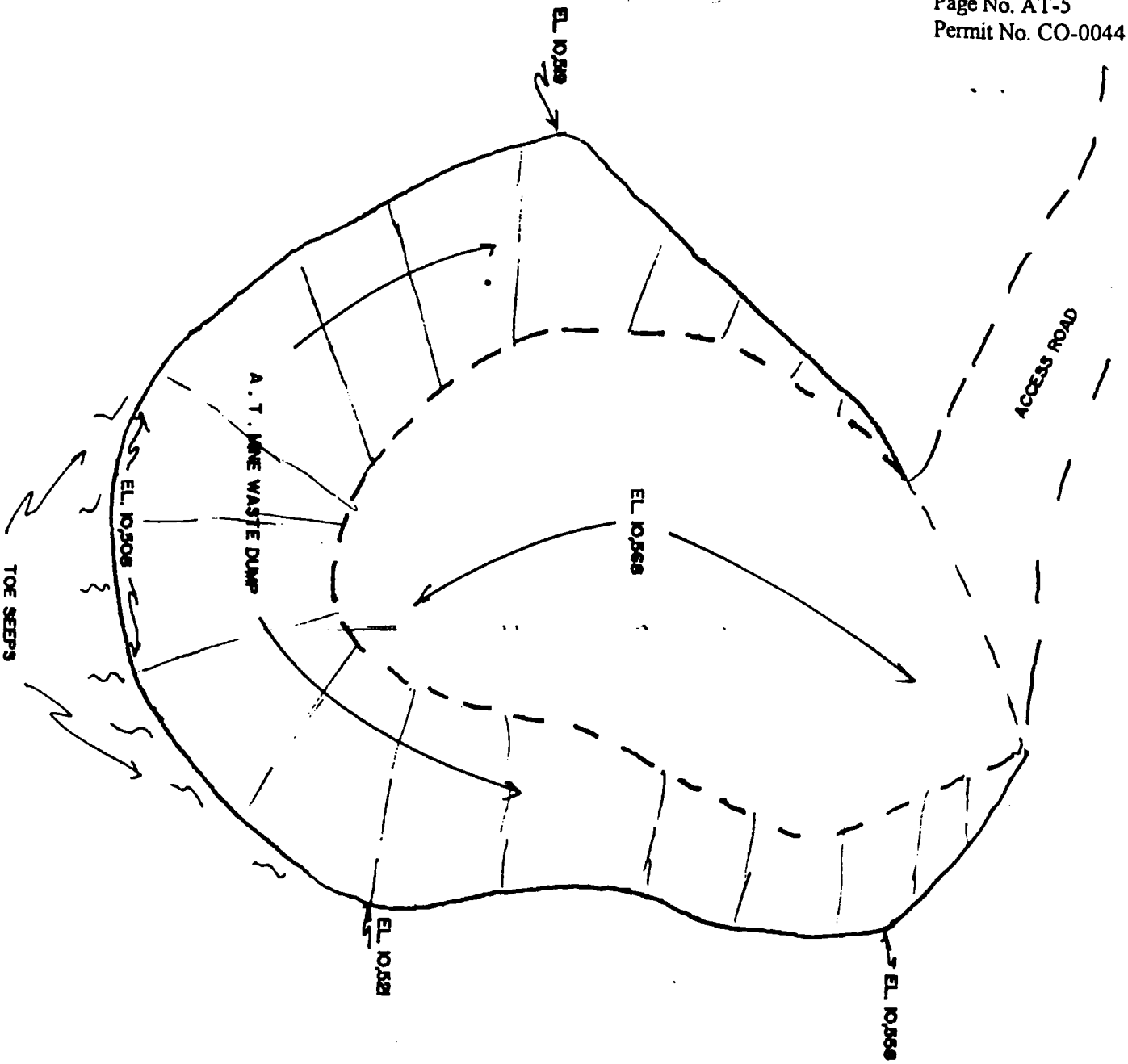
6. Consistency with Other Plans

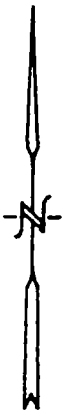
This mine remediation plan is consistent with Sunnyside's MLR permit # M-77-378.



LOCATION DIAGRAM

SUNNYSIDE GOLD CORP.
SAN JUAN COUNTY, CO.





	SUNNYSIDE GOLD CORPORATION	AMERICAN TUNNEL MINE WASTE DUMP SCALE : 1 IN. = 50 FT.

SITE CHARACTERIZATION DATA SUMMARY

SITE: AMERICAN TUNNEL WASTE DUMP

SITE CHARACTERIZATION DATA SUMMARY

SITE: AMERICAN TUNNEL WASTE DUMP

MEDIA: SOILS

Analysis Method	Sample Description	Sample Date	DATA SOURCE	pH s.u.	Al ppm	Cd ppm	Cu ppm	Fe ppm	Mn ppm	Pb ppm	Zn ppm	COMMENTS
1:1 Water Bath	PbCO3		SGC		18.5	0.399	7.05	707	8.1	2.35	105	
Modified 1312 TCLP	PbCO3		SGC		<0.1	0.009	0.324	3.68	0.84	6.27	3.42	
Total Metal Conc.	PbCO3		SGC	2.6	810	43	1660	24700	120	3210	12300	
1:1 Water Bath	WASTE-SUB		SGC		751	0.226	0.997	1650	1012	1.19	334	
Modified 1312 TCLP	WASTE-SUB		SGC		104.5	0.019	0.137	187.4	81.5	<0.005	26	
Total Metal Conc.	WASTE-SUB		SGC	3.5	7050	0.4	25	17400	473	70.5	255	
1:1 Water Bath	SLUDGE		SGC		1.35	0.311	0.204	0.21	63	0.17	74	
Modified 1312 TCLP	SLUDGE		SGC		0.48	0.035	0.043	0.11	7.9	0.041	11.3	
Total Metal Conc.	SLUDGE		SGC	4.7	15500	125	366	39600	1600	2120	3620	
1:1 Water Bath	AT-LAKE SED-1		SGC		3.5	0.187	1.65	0.19	24	0.458	34	
Modified 1312 TCLP	AT-LAKE SED-1		SGC		0.51	0.015	0.144	<0.05	2.22	0.05	3.01	
Total Metal Conc.	AT-LAKE SED-1		SGC	3.8	14700.00	12	321	47500	1260	90	3590.00	
1:1 Water Bath	AT-LAKE SED-2		SGC		1.50	0.039	0.3	0.07	6.64	0.304	7.60	
Modified 1312 TCLP	AT-LAKE SED-2		SGC		<0.1	0.004	0.016	0.31	0.65	0.031	0.68	
Total Metal Conc.	AT-LAKE SED-2		SGC	3.8	14700.00	5	176	44500	1750	90	3590.00	
1:1 Water Bath	TOP BLK LAYER		SGC		29.60	8.21	11.7	11.3	191	3.6	610.00	
Modified 1312 TCLP	TOP BLK LAYER		SGC		3.20	0.529	1.3	1.24	15.6	4.2	46.50	
Total Metal Conc.	TOP BLK LAYER		SGC	2.9	1980.00	17.4	1620	9150	1140	44	2830.00	
1:1 Water Bath	BOG OLD LAYER		SGC		29.60	8.21	11.7	11.3	191	3.6	610.00	
Modified 1312 TCLP	BOG OLD LAYER		SGC		3.20	0.529	1.3	1.24	15.6	4.2	46.50	
Total Metal Conc.	BOG OLD LAYER		SGC	4.6	5120.00	2.2	23	21100	160	36	1060.00	
1:1 Water Bath	BOG SAND/CLAY		SGC		29.60	8.21	11.7	11.3	191	3.6	610.00	
Modified 1312 TCLP	BOG SAND/CLAY		SGC		3.20	0.529	1.3	1.24	15.6	4.2	46.50	
Total Metal Conc.	BOG SAND/CLAY		SGC	4.3	15500.00	0.5	74	19400	340	260	600.00	
1:1 Water Bath	AT WASTE DUMP		SGC		640.00	5	100	1070	480	0.29	1100.00	
Modified 1312 TCLP	AT WASTE DUMP		SGC		41	0.22	5.8	36	26	2	51	
Total Metal Conc.	AT WASTE DUMP		SGC	3.3	4100	20	3700	43800	900	4500	5600	

Attachment AT
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SITE CHARACTERIZATION DATA SUMMARY

SITE: AMERICAN TUNNEL WASTE DUMP

MEDIA: WATER

Sample	Filt./Unfilt.	Flow GPM		Sample Date		pH s.u.		Al mg/l		Cd mg/l		Cu mg/l		Fe mg/l		Mn mg/l		Pb mg/l		Zn mg/l		Comments
ATS-1	Filtered		0	28-Oct-88		ND	ND		ND		ND		ND		ND		ND		ND			
ATS-1	Filtered		0	11-May-89		4.76		5.9		0.341		1.07		0.09		65.7		0.69		51.2		
ATS-1	Filtered		5	05-Oct-89		5.2		1.6		0.034		0.11		0.12		4.44		0.066		4.81		
ATS-1	Filtered		2.08	13-Jun-90		4.73		0.9		0.002		0.03		0.32		1.24		0.031		1.81		
ATS-1	Filtered		0.07	10-Jul-90		5.05		1.4		0.013		0.06		0.75		9.95		0.014		4.98		
ATS-1	Filtered		0	07-Aug-90		ND	ND		ND		ND		ND		ND		ND		ND			
ATS-1	Filtered		0	11-Sep-90		ND	ND		ND		ND		ND		ND		ND		ND			
ATS-1	Filtered		0	23-Oct-90		ND	ND		ND		ND		ND		ND		ND		ND			
ATS-1		NO FLOW		14-May-91		ND	ND		ND		ND		ND		ND		ND		ND			
ATS-1	Filtered		20	31-May-91		4.73		0.8		0.003		0.01		0.11		0.48	ND			1.1		
ATS-1	Filtered		10	13-Jun-91		4.67		0.8		0.0025	ND			0.27		0.49		0.007		1.16		
ATS-1	Filtered	STANDING		24-Sep-91		4.25		1.1		0.002		0.03		1.36		1.78	ND			1.83		
ATS-1	Filtered		0.72	09-Jun-92		4.53		38.4		0.314		2.19		74.9		107		1.19		81.3		
ATS-1	Filtered		3.71	08-Jun-93		5		1	<0.002			0.03		0.05		0.74	<0.005			0.93		
ATS-1	Filtered		1.2	03-Jun-94		5.3		0.6	<0.002			0.01	<0.05			0.8	<0.005			0.62		
ATS-1		NO FLOW		26-Oct-94		ND	ND		ND		ND		ND		ND		ND		ND			
ATS-1		NO FLOW		11-Jul-95		ND	ND		ND		ND		ND		ND		ND		ND			
ATS-2	Filtered		0	28-Oct-88		ND	ND		ND		ND		ND		ND		ND		ND			
ATS-2	Filtered		15	11-May-89		4.13		18.7	ND			0.98		4.08		212		1.25		104		
ATS-2	Filtered		1	22-Jun-89		3.8		17.1		0.0		0.7		6.28		224		0.13		97.68		
ATS-2	Filtered		2	^10/5/89		3.4		25.2		2.1		1.4		26.95		467.9		0.7		102.84		
ATS-2	Filtered		9.72	13-Jun-90		4.2		16.1		0.1		0.9		3.56		192		1.944		93.1		
ATS-2	Filtered		5	10-Jul-90		3.8		14.0		0.5		0.9		2.34		225		2.331		93.6		
ATS-2S	Filtered		0.5	07-Aug-90		3.25		8.8		0.045		0.44		7.02		162		1.18		45.4		
ATS-2C	Filtered		0.5	07-Aug-90		3.5		17.5		0.125		0.72		1.58		241		1.85		94.2		
ATS-2	Filtered		0.75	11-Sep-90		3.68		18.4		0.268		0.02		4.72		263	<.005			104		
ATS-2S	Filtered		3	23-Oct-90		3.06		10.7		0.16		0.95		20.4		124		0.91		55.6		
ATS-2C	Filtered		4	23-Oct-90		3.02		48.7		0.58		1.81		15.3		332		1.26		149		
ATS-2		NO FLOW		14-May-91		ND	ND		ND		ND		ND		ND		ND		ND			
ATS-2	Filtered		20	31-May-91		2.97		42.6		0.497		2.55		39.21		266.3		0.92		155.5		
ATS-2	Filtered		25	13-Jun-91		2.79		42.3		0.0058		2.15		44.02		304.6		0.135		787.1		
ATS-2	Filtered		10	24-Sep-91		2.77		73		0.815		4.25		62.25		396.5		0.76		228.1		
ATS-2	Filtered		3.57	09-Jun-92		2.41		143		1.41		9.41		416		488		0.48		857		
ATS-2	Filtered		2.93	08-Jun-93		2.8		177		1.48		14.1		448		482		0.51		509		
ATS-2	Filtered		2.083	09-Sep-93		2.6		341		3.3		3.2		764		672		0.26		840		
ATS-2	Filtered		0.7	03-Jun-94		2.5		1160		2.02		0.8		3040		1430		0.35		1930		
ATS-2		NO FLOW		26-Oct-94		ND	ND		ND		ND		ND		ND		ND		ND			
ATS-2	Filtered		1.3889	11-Jul-95		2.9		878		7.46		89.2		2390		1630		0.17		1906		
ATS-COMP	Filtered		31	08-Jun-93				45.7		0.31		3.19		80.1		132		1.03		108		
ATS-COMP	Filtered		0.57	09-Sep-93		2.6		159		1.67		1.94		344		336		0.8		456		

SITE CHARACTERIZATION DATA SUMMARY

SITE: **AMERICAN TUNNEL WASTE DUMP**

RAINFALL DATA: *Source Silverton Weather Station*

YEAR	Rainfall inch		Snow inch	Moisture as Snow inch	Total Moisture inch
June '91-May '92	9		134.75	11.58	21.1
June '92-May '93	9.82		260.5	12.89	22.71
June '93-May '94	7		130.5	10.03	17.45

RAINFALL DATA: Source Idarado Mining Company--Red Mountain Weather Station

YEAR	Rainfall inch		Snow inch	Moisture as Snow inch	Total Moisture inch
June '91-May '92	8		444.5	35.6	43.6
June '92-May '93	8.8		545.5	49.9	58.7
June '93-May '94	7.1		330.5	26.1	33.2

Attachment AT
Page No. AT-8
Permit No. CO-0044761

ED_000552B_00000378-00081

Mine Remediation Plan: Boulder Creek Tailings Project

Remediating Party: Sunnyside Gold Corporation
P.O. Box 177
Silverton, CO 81433

contact William B. Goodhard
Resident Manager

1. Description of Mining Activities

Physical Description of Conditions

An old retention pond exists along the west bank of the Animas River. The pond is dry and consists of tailings. There is minimal vegetation on the pond and it is exposed to rainfall and snowmelt. There is an estimated measured total of 1300 cubic yards of tailings. The pond was used by previous owners of the Mayflower Mill during startup and shutdown of the mill as a tailings system catchment. This system was used in the mid to late 1970's.

General Description of the Mining Site

The Boulder Creek Tailings Project is located 1.7 miles north of Silverton along Colorado State Highway 110. The site is east of the Highway and just north of the confluence of Boulder Creek and the Animas River. See the attached location map. The total disturbed land is approximately 0.5 acres.

Identification of Lands

Lands lie between Colorado 110E and the Animas River to the north of Boulder Creek, San Juan County, Colorado. See attached location map and site map.

Latitude 37 degrees 50 minutes Longitude 107 degrees 38 minutes

Identification of the Waters of the United States Potentially Affected

Boulder Creek and the Animas River at the confluence of Boulder Creek. See attached map.

2. Site Map

Attached

3. Stormwater Management Controls

Since the tailings are dry and have no water other than from storm events, removal can be scheduled such that existing berm will serve for sediment catchment during removal. Should other temporary stormwater control measures be needed as removal takes place, they will be installed.

4. Inspection and record keeping Procedures

The Manager or a member of the Technical Service Department will inspect this project prior to and during remediation efforts on a regular basis. Quarterly reports and photographs will be sent to both the Colorado Water Quality Control Division and the Colorado Division of Minerals and Geology. Prior to remediation efforts the area will be Photographed and the Photographs will be submitted with the first quarterly report.

5. Mine Remediation Plan

Legal Right to Enter and Conduct Activities

SGC has contacted the property owner concerning this project. Permission will be sought when terms of the remedial projects are substantially agreed upon. No work will commence until proper permission is granted.

Remedial Goals and Objectives

Cleanup of historic tailings and removal from contact with rainwater and snowmelt in order to reduce potential impacts to the Animas River from dissolved metals and mineralized sediment.

Site Loading Estimate

For all of the remediation projects, and based on limited information, the site loading estimate for each project site was based on the following methodology:

Adits-

Using available data, zinc loading was calculated based on the average flow and average zinc values.

Mine Waste Dumps and Tailings Piles-

Site composite soil samples were tested using a water bath extraction. This test consists of exposing a 1:1 ratio by weight of material to deionized water. The mixture is briefly mixed then allowed to set for 30 minutes. The sample was then filtered (0.45 micron) and analyzed for metals.

Annualized loading was calculated using rainfall data (proportionally adjusted for site elevation between the Silverton and Red Mountain weather stations), exposed area of waste dump or tailings site and loading based on 1:1 water bath test results. For comparison to adit flow loadings projects, the annualized loading was converted to an average daily loading.

Based on these assumptions and procedures, SGC estimates that the average daily loading for this site may be as much as 7.5 pounds of dissolved zinc per day. SGC is under no obligation to defend these estimates and they should only be used as an estimate. SGC does not represent that its mitigation project at this site will remove any specific percentage of metals loading from this site: the loading estimate contained herein does not form the basis of an enforceable permit obligation.

Description of Project

The tailings are dry through most of the year except during high rain events and snowmelt. The pond will be removed and hauled to SGC's Mayflower Tailings Pond #4. Under Sunnyside Gold's MLR Permit (M-77-378) this material can be consolidated into Tailings Pond # 4. The pH of the tailings will be adjusted by mixing with high pH material during consolidation. The tailings will be capped and planted as part of SGC's approved reclamation plan for Tailings Pond #4. The soil at the project site will be tested for necessary amendments, then seeded and mulched. This plan is subject to notification requirements for disturbance of Historical Mining Sites to the board of the San Juan County Commissioners.

Work Plan

1) Remove old tailings utilizing the existing berm for sediment catchment.
2) Relocate the tailings to Tailings Pond #4 at the Mayflower Mill and mix with pH neutralizing material.
3) Regrade area to blend in with surrounding topography.
4) Add soil amendments as necessary, seed and mulch.

Analysis

Removal and consolidation from rain and snow melt is a Best Management Practice. This will isolate the material from direct contact with stormwater events and reduces the risk for potential impact to the Animas River and Boulder Creek.

Monitoring

Due to the close proximity and the high flow which occurs in the Animas River no monitoring is contemplated for this project. In lieu of monitoring at this location the tributary mouth will be sampled on a rotating basis with the U. S. Bureau of Reclamation. Monitoring reports will be submitted the month after the information is available as well as with the quarterly reports and sent to both the Water Quality Control Division and the Division of Minerals and Geology.

Budget

SGC will fund this project unless the property owner chooses to contribute.

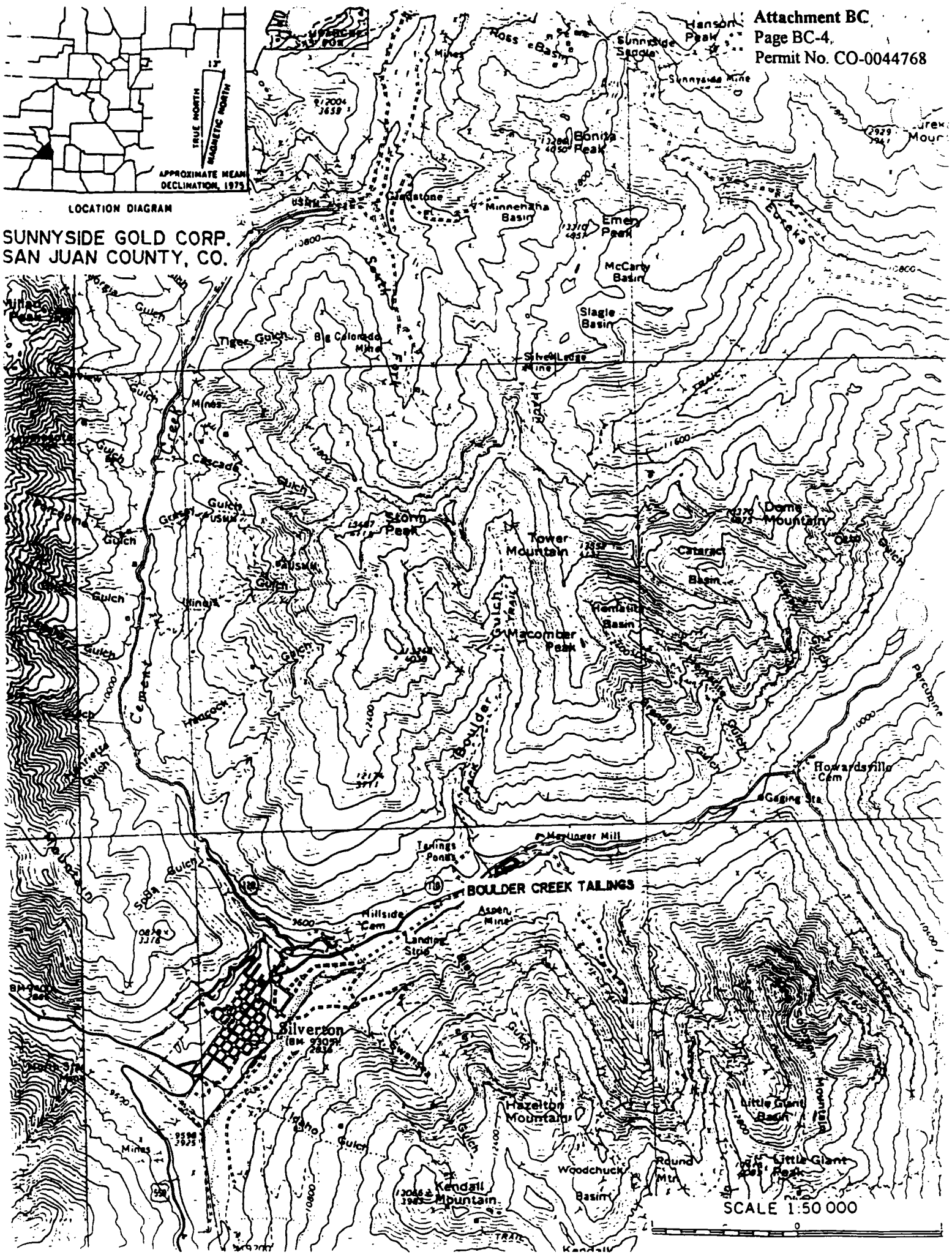
Description of Land Use

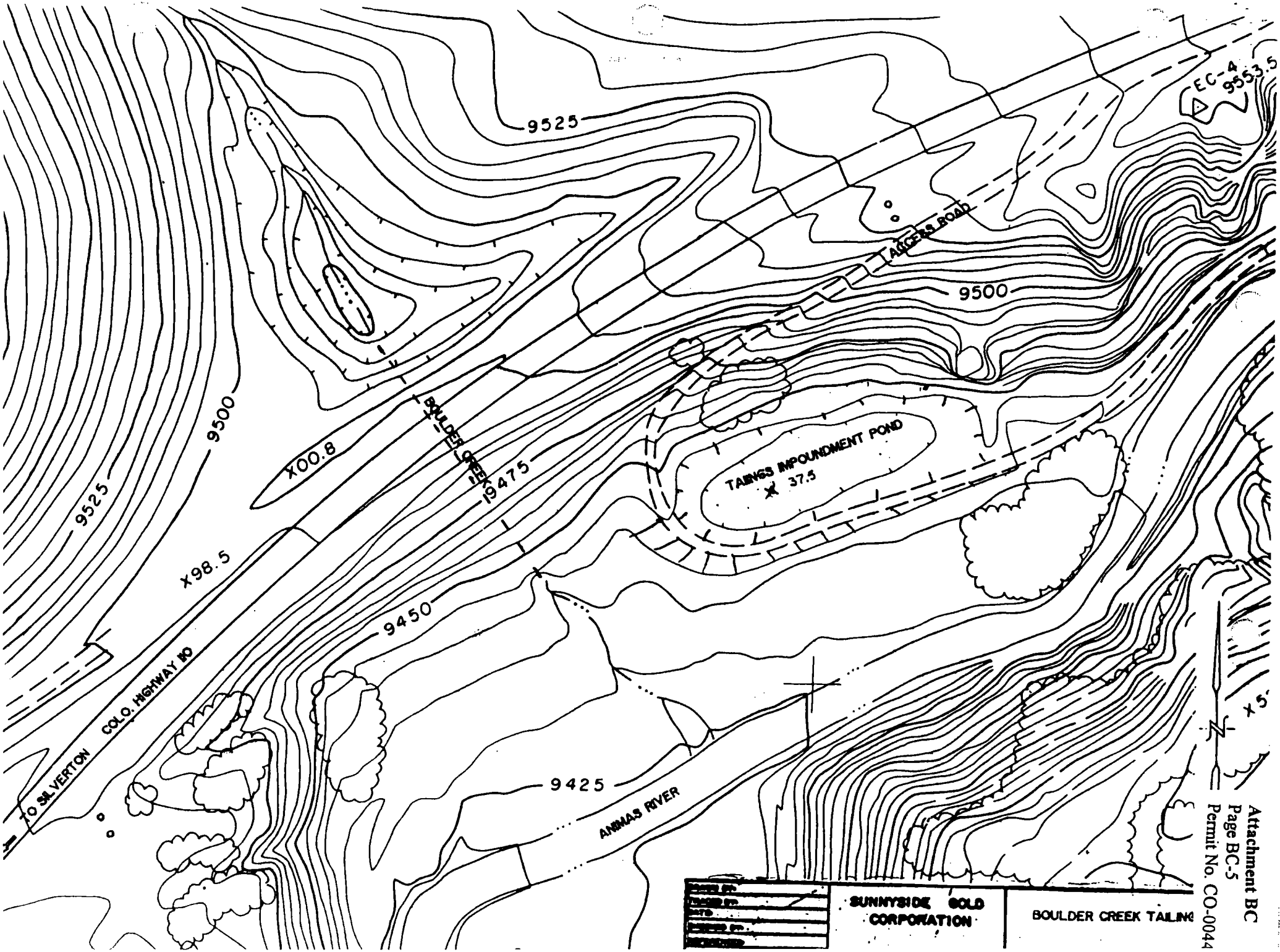
This remediation work plan is intended to use Best Management Practices on the site to conform with surrounding land use policies for:

1) Land stabilization, limited rangeland and limited wildlife habitat to approximately resemble a mountain park ecosystem consistent with bordering undisturbed areas.
2) The conversion of facilities, usable for purposes other than for mining, to alternate uses and preserve facilities of historic interest.

6. Consistency with Other Plans

This mine remediation plan is the only cleanup plan for this site. Consolidation of the tailings material at Tailings Pond #4 is consistent with Sunnyside Gold Corporation's Colorado MLR Permit M-77-378.


LOCATION DIAGRAM
APPROXIMATE MEAN DECLINATION, 1975
TRUE NORTH
MAGNETIC NORTH
SUNNYSIDE GOLD CORP.
SAN JUAN COUNTY, CO.
Hanson Peak
Sunnyside Saddle
Sunnyside Mine
Ross Basin
Bonita Peak
Gladstone
Minnehaha Basin
Emery Peak
McCarty Basin
Slagle Basin
Tiger Gulch
Big Colorado Mine
Silver Ledge Mine
Cascade Creek
Storm Peak
Tower Mountain
Dome Mountain
Cataract Basin
Hematite Basin
Macomber Peak
Howardsville
Gaging Sta
Mayflower Mill
Tailings Ponds
BOULDER CREEK TAILINGS
Aspen Mine
Landing Strip
Silverton
Hazelton Mountain
Little Giant Basin
Little Giant Peak
Round Mtn
Woodchuck Basin
Kendall Mountain
SCALE 1:50 000


9525
9500
9475
9450
9425
EC-4
9553.5
AIGER'S ROAD
TAILINGS IMPOUNDMENT POND
37.5
BOULDER CREEK
X00.8
X98.5
TO SILVERTON COLO. HIGHWAY NO
ANIMAS RIVER
SUNNYSIDE GOLD CORPORATION
BOULDER CREEK TAILING
X 5'
N
Attachment BC
Page BC-5
Permit No. CO-0044

SITE CHARACTERIZATION DATA SUMMARY

SITE: **BOULDER CREEK TAILINGS**

SITE CHARACTERIZATION DATA SUMMARY

SITE: **BOULDER CREEK TAILINGS**

MEDIA: **SOILS**

Analysis Method	Sample Description	Sample Date	DATA SOURCE	pH s.u.	Al ppm	Cd ppm	Cu ppm	Fe ppm	Mn ppm	Pb ppm	Zn ppm	COMMENTS
1:1 Water Bath	Tailings-Old Pond		SGC		158	5.18	67.2	220	249	2.42	1125	
Modified 1312 TCLP	Tailings-Old Pond		SGC		14.8	0.334	4.49	8.7	11.7	3.55	80.5	
Total Metal Conc.	Tailings-Old Pond		SGC	2	4450	115	3310	52000	1130	26200	36500	

SITE CHARACTERIZATION DATA SUMMARY

SITE: **BOULDER CREEK TAILINGS**

RAINFALL DATA: Source Silverton Weather Station

YEAR	Rainfall inch		Snow inch	Moisture as Snow inch	Total Moisture inch
June '91-May '92	9.55		134.75	11.58	21.1
June '92-May '93	9.82		260.5	12.89	22.71
June '93-May '94	7.42		130.5	10.03	17.45

Mine Remediation Plan: Columbus Mine Portals

Remediating Party: Sunnyside Gold Corporation
P.O. Box 177
Silverton, CO 81433

contact William B. Goodhard
Resident Manager

1. Description of Mining Activities

Physical Description of Conditions

The project area includes two mine portals and two waste dumps. The lower portal discharges onto the mine dump and percolates through it. The dumps are exposed to rainwater and snowmelt as well. The regional geology is volcanic rocks with narrow veins containing base metals; Fe, Pb, Cu and Zn. Sampling of the waters in this area indicates that even though the portal discharge is small, there is a substantial increase in dissolved metal loading to the Animas River.

General Description of the Mining Site

The history, including dates of operation, of this property is not known by Sunnyside Gold Corporation. However it is easy to see that this property is very old as evidenced by the historical structures. This surface disturbance is approximately 2.0 acres.

Identification of Lands

The Columbus mine portals and waste dumps lie immediately north of Animas Forks, San Juan County, Colorado. See attached location and site map.

Identification of the Waters of the United States Potentially Affected

This property sits directly above the confluence of the Animas River and the West Fork of the Animas River. See attached location map.

2. Site Map

Attached

3. Stormwater Management Controls

Prior to any work taking place on the property, Sunnyside will install sediment catchment traps to minimize impacts from sediments entering the waters of the State.

4. Inspection and Record Keeping

The Manager or a member of the Technical Services Department will inspect this property on a regular basis while the work is being done and periodically until the permit is released. Quarterly reports with photographs will be submitted to both the Water Quality Control Division and The Colorado Division of Minerals and Geology. Photographs of the property prior to remediation will be submitted with the first quarterly report.

Monitoring

Monitoring points will be upstream and downstream at this project site as well as flows from the adits and dumps. Stream sampling for this project will occur in the North Fork and the West Fork of the Animas River. Monitoring will start prior to remediation work and continue until two years after the project is completed. Monitoring will occur four times

yearly with one at high flow and two at low flow and will be submitted by the 28th day of the month following receipt of analysis as well as with the quarterly reports. All samples taken will be analyzed for dissolved metals Zn, Fe, Al, Mn, Cd, and Cu, total sulfate, hardness, a field pH as well as flow measurements.

Reporting

Should this project become necessary to maintain water quality in the Upper Animas, SGC will notify WQCD prior to work starting. Prior to installation of hydraulic seals in the adits, SGC will submit seal designs to WQCD. SGC will submit quarterly reports for this project. Once all reclamation activities are complete, a final report will be submitted. Reports will be sent to the Division of Minerals and Geology as well as the Water Quality Control Division. The report will include activities to date as well as planned activities for future work.

5. Mine Remediation Plan

Legal Right to Enter and Conduct Activities

SGC has not contacted the property owner. No contact will be initiated until substantial agreement is reached with WQCD concerning remediation projects. No work will commence until proper permission is granted.

Remedial Goals and Objectives

Reduction of low pH, metal laden waters flowing into the West Fork of the Animas River at Animas Forks by:

1) reduction of acidity in the headwaters through limiting the quantity of waters reacting with pyrite and other sulfide minerals.
2) reduction of exposure to waste material by snowmelt and rainwater.
3) visually reclaim area while preserving historic aspects.

Site Loading Estimate

For all of the remediation projects, and based on limited information, the site loading estimate for each project site was based on the following methodology:

Adits-

Using available data, zinc loading was calculated based on the average flow and average zinc values.

Mine Waste Dumps and Tailings Piles-

Site composite soil samples were tested using a water bath extraction. This test consists of exposing a 1:1 ratio by weight of material to deionized water. The mixture is briefly mixed then allowed to set for 30 minutes. The sample was then filtered (0.45 micron) and analyzed for metals.

Annualized loading was calculated using rainfall data (proportionally adjusted for site elevation between the Silverton and Red Mountain weather stations), exposed area of waste dump or tailings site and loading based on 1:1 water bath test results. For comparison to adit flow loadings projects, the annualized loading was converted to an average daily loading.

Based on these assumptions and procedures, SGC estimates that the average daily loading for this site may be as much as 22.6 pounds of dissolved zinc per day. SGC is under no obligation to defend these estimates and they should only be used as an estimate. SGC does not represent that its mitigation project at this site will remove any specific percentage of metals loading from this site: the loading estimate contained herein does not form the basis of an enforceable permit obligation.

Description of Project

The waste dumps will be isolated from portal flows as well as stormwater events. The dumps will be regraded and hydrologic diversions installed to prevent run on conditions. The dumps would then be stabilized with basic pH material and revegetated to minimize percolation from stormwater events.

The two portals will be opened and studied for the placement of hydraulic seals. In order for hydraulic seals to be placed, SGC feels that sites meeting the following conditions need to be found.

1)Location far enough underground to avoid the near surface fractures and joints caused by weathering.

2)Adequate rock compressive strength for structural stability.

3)A length of the tunnel with minimal faulting or other geologic features that may serve as a leakage pathway.

4)Adequate ground cover over the potential site to resist the hydrostatic forces from the potential maximum head.

If an acceptable location can be found, SGC will design and install two hydraulic seals. After sealing is complete, the seal will be contact grouted and the diversion pipes, if necessary for construction, grouted. The near surface fracture flows typically found will be diverted to avoid contact with waste material and the portal closed. Design of hydraulic seals will be according to current engineering practices. The design approach will be similar to the attached paper on Tunnel Bulkheads.

This plan is also subject to notification requirements for disturbance of Historical Mining Sites to the board of the San Juan County Commissioners.

Work Plan

1) Build catchments for potential adit releases.
2) Open and evaluate adits for hydraulic seals.
3) Design and install hydraulic seals.
4) Grout seals and bypass pipes.
5) Portal closure.
6) Surface diversions and dump regrading.
7) Addition of pH neutralizing material, seeding and mulching.

Analysis

Diversion and isolation of the mine dumps (including pH stabilization) will isolate this material from direct contact with run on and intermittent flows and minimize infiltration from stormwater events. This will improve water quality of the Animas River at Animas Forks.

The hydraulic seals proposed for the Columbus Adits will reduce the unsaturated zone by removing the drain. This will result in minimizing the oxygen available for reaction with the sulfide materials in the area. The hydrological conditions will be restored to an approximation of pre mining conditions.

Contingency Plans

Should the concept of hydraulic seals not be practical after engineering studies, SGC will consult with the Division of Minerals and Geology and WQCD for other mine drainage mitigation alternatives. If an acceptable system can be arrived at, SGC will install such a system.

Catchments will be provided in order to prevent impact to the Animas River during excavation prior to opening portals.

Monitoring

Monitoring points will be upstream and downstream at this project site as well as flows from the adits and dumps. Stream sampling for this project will occur in the North Fork and the West Fork of the Animas River. Monitoring will start prior to remediation work and continue until two years after the project is completed. Monitoring will occur four times yearly with one at high flow and two at low flow and will be submitted by the 28th day of the month following receipt of analysis as well as with the quarterly reports. All samples taken will be analyzed for dissolved metals; Zn, Fe, Al, Mn, Cd, and Cu, total sulfate, hardness, a field pH as well as flow measurements.

Budget

SGC will fund this project.

Description of Land Use

This remediation work plan is intended to use Best Management Practices on the site to conform with surrounding land use policies for:

1) Land stabilization, limited rangeland and wildlife habitat to approximately resemble a mountain park ecosystem consistent with bordering undisturbed areas.

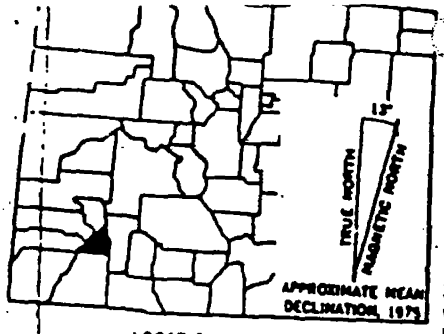
2) The conversion of facilities, usable for purposes other than for mining, to alternate uses and preserve facilities of historic interest.

Attachment Available From WQCD Upon Request

"Tunnel Bulkheads for Acid Mine Drainage", Einarson and Abel, Proc Int'l Symp on Unique Underground Structures, 1990

6. Consistency with Other Plans

There are no other remediation plans for this property.

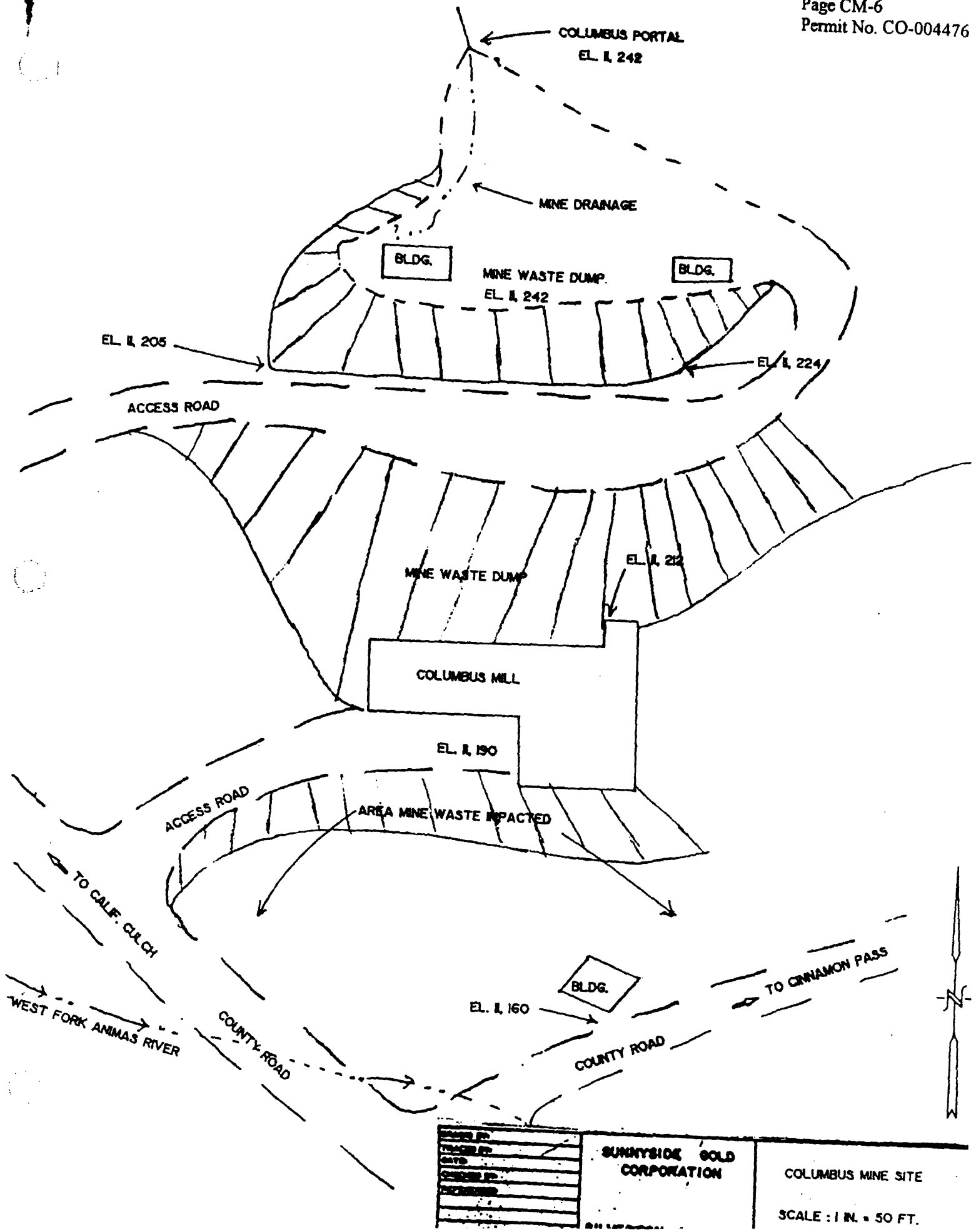


LOCATION DIAGRAM

SUNNYSIDE GOLD CORP.
SAN JUAN COUNTY, CO.

COLUMBUS MINE PORTALS

SCALE 1:50 000


COLUMBUS PORTAL
EL. II, 242
MINE DRAINAGE
BLDG.
MINE WASTE DUMP
EL. II, 242
BLDG.
EL. II, 205
EL. II, 224
ACCESS ROAD
MINE WASTE DUMP
EL. II, 212
COLUMBUS MILL
EL. II, 190
ACCESS ROAD
AREA MINE WASTE IMPACTED
TO CALF. GULCH
WEST FORK ANIMAS RIVER
COUNTY ROAD
BLDG.
EL. II, 160
TO CINNAMON PASS
COUNTY ROAD
SUNNYSIDE GOLD CORPORATION
COLUMBUS MINE SITE
SCALE : 1 IN. = 50 FT.

SITE CHARACTERIZATION DATA SUMMARY

SITE: COLUMBUS MINE

SITE CHARACTERIZATION DATA SUMMARY

SITE: COLUMBUS MINE

MEDIA: WATER

Sample	Filt./Unfilt.	Flow GPM	Sample Date	DATA SOURCE	pH s.u.	Al mg/l	Cd mg/l	Cu mg/l	Fe mg/l	Mn mg/l	Pb mg/l	Zn mg/l	Comments
A11a	Filt	9	20-Jul-93	CDPHE	6.35	13.00	0.9	8.2	63		0.31	210.00	Columbus adit
A11	Unfilt	2585	10-Sep-91	CDPHE	6.05	2.00	0.0037	0.018	0.18	4.1	0.012	1.20	W Fork Animas above Columbus
	Filt		10-Sep-91	CDPHE		1.20	0.0033	0.014	0.053	4.1	<	1.20	
	Unfilt	14945	25-Jun-92	CDPHE	5.88								
	Filt		25-Jun-92	CDPHE		0.73	0.0042	0.02			<	0.96	
	Unfilt	434	15-Oct-92	CDPHE	6.77		0.006	0.018	0.1		<	1.60	
	Filt		15-Oct-92	CDPHE		0.16	0.005	0.008			<	1.50	
	Unfilt	5749	20-Jul-93	CDPHE	5.99								
	Filt		20-Jul-93	CDPHE		0.27	0.00293	0.016	0.02		<	0.84	
A10	Unfilt	2105	10-Sep-91	CDPHE	6.03	2.10	0.005	0.033	0.22	3.7	0.012	1.40	W Fork Animas below Columbus
	Filt		10-Sep-91	CDPHE		1.00	0.005	0.026	0.046	3.7	<	1.40	
	Unfilt	14990	25-Jun-92	CDPHE	6.02		0.0048	0.027	0.078		0.007	1.00	
	Filt		25-Jun-92	CDPHE		0.64	0.004	0.023		2.9	<	1.00	
	Unfilt	776	15-Oct-92	CDPHE	7.25		0.007	0.044	0 12		<	2.10	
	Filt		15-Oct-92	CDPHE		0.18	0.007	0.029		3.6	<	2.00	
	Unfilt	5623	20-Jul-93	CDPHE	6.52								
	Filt		20-Jul-93	CDPHE		0.90	0.00297	0.02	0.066		<	0.85	

SITE CHARACTERIZATION DATA SUMMARY

SITE: **COLUMBUS MINE**

RAINFALL DATA: Source Silverton Weather Station

YEAR	Rainfall		Snow	Moisture as Snow	Total Moisture
	inch		inch	inch	inch
June '91-May '92	9.55		134.75	11.58	21.1
June '92-May '93	9.82		260.5	12.89	22.71
June '93-May '94	7.42		130.5	10.03	17.45

RAINFALL DATA: Source Idarado Mining Company--Red Mountain Weather Station

YEAR	Rainfall		Snow	Moisture as Snow	Total Moisture
	inch		inch	inch	inch
June '91-May '92	8.0		444.5	35.6	43.6
June '92-May '93	8.8		545.5	49.9	58.7
June '93-May '94	7.1		330.5	26.1	33.2

Mine Remediation Plan: Surface Mill Tailings at Eureka

Remediating Party: Sunnyside Gold Corporation
P.O. Box 177
Silverton, CO 81433

contact: William B. Goodhard
Resident Manager

1. Description of Mining Activities

Physical Description of Conditions

The southern half of the old townsite of Eureka may have been impacted by milling operations in the early part of the century. The historic tailings are in two large ponds as well as smaller scattered locations throughout the southern half of the townsite. The total measured estimated volume is 65,500 cubic yards. These tailings are exposed to rain waters, snow melt, high flow in the Animas River and high flow in the South Fork of the Animas River and are subject to erosion from periodic changes in the river channel. As a result, there may be an impact on the Animas River. The area is visually impaired due to historic mining debris.

General Description of the Mining Site

The historic tailings were deposited in the late 1920's and early 1930's when early attempts were made to keep the tailings from the historic mill out of the Animas River. The total disturbed area is approximately 9.1 acres.

Identification of Lands

Historic surface tailings disturbance located at the abandoned townsite of Eureka, in San Juan County Colorado. See attached general location map and site map.

Latitude 37 degrees 53 minutes Longitude 107 degrees 34 minutes

Identification of the Waters of the United States Potentially Affected

Animas River below the confluence with Eureka Creek and the confluence of Minnie Gulch. See attached map.

2. Site Map

Attached

3. Stormwater Management Controls

Sediment traps will be created as needed below the project to prevent tailings from being washed into the Animas River. The traps will be cleaned and removed when no longer necessary for the project.

4. Inspection and Record keeping

The Manager or a member of the Technical Service Department will inspect this property on a regular basis while the work is being done and periodically until the permit is released. Quarterly reports with photographs will be submitted to both the Water Quality Division and the Colorado Division of Minerals and Geology. Photographs of the property prior to remediation will be submitted with the first quarterly report.

5. Mine Remediation Plan

Legal Right to Enter and Conduct Activities

Besides SGC, there are two other owners who will be contacted for permission to enter and conduct activities on their property. SGC will contact property owners after substantial agreement on remedial projects is reached. No work will commence until property owners' permission is obtained. SGC has not contacted these property owners concerning this project at this time.

Property ownership is as follows:

Sunnyside Gold Corporation 54%
United States Bureau of Land Management 22%
San Juan County 24%

Remedial Goals and Objectives

Cleanup of historic tailings and removal from contact with rainwater, snowmelt and stream flows in order to reduce the potential impact to the Animas River from heavy metals.

Site Loading Estimate

For all of the remediation projects, and based on limited information, the site loading estimate for each project site was based on the following methodology:

Adits-

Using available data, zinc loading was calculated based on the average flow and average zinc values.

Mine Waste Dumps and Tailings Piles-

Site composite soil samples were tested using a water bath extraction. This test consists of exposing a 1:1 ratio by weight of material to deionized water. The mixture is briefly mixed then allowed to set for 30 minutes. The sample was then filtered (0.45 micron) and analyzed for metals.

Annualized loading was calculated using rainfall data (proportionally adjusted for site elevation between the Silverton and Red Mountain weather stations), exposed area of waste dump or tailings site and loading based on 1:1 water bath test results. For comparison to adit flow loadings projects, the annualized loading was converted to an average daily loading.

Based on these assumptions and procedures SGC, estimates that the average daily loading for this site may be as much as 3.6 pounds of dissolved zinc per day. SGC is under no obligation to defend these estimates and they should only be used as an estimate. SGC does not represent that its mitigation project at this site will remove any specific percentage of metals loading from this site: the loading estimate contained herein does not form the basis of an enforceable permit obligation.

Description of Project

Sunnyside Gold Corporation (SGC) will provide sediment catchment traps below the tailings, then remove tailings, add high pH material to stabilize pH near neutral and redeposit tailings at the Mayflower Tailings Pond #4. Under Sunnyside Gold Corporation's MLR Permit M-77-378 this material can be consolidated into Tailings Pond #4. The tailings would then be capped with growth media and planted as part of the approved reclamation plan at Tailings Pond #4. Any material caught in the catchment traps will also be removed. This project may require a 404 permit from the Army Corps of Engineers due to work occurring in a flood plain. This plan is also subject to notification requirements for disturbance of Historical Mining Sites to the board of the San Juan County Commissioners.

The area is an active alluvial fan with little or no topsoil or vegetation. Therefore, seeding is not planned. This work is planned to take place in 1996 during late summer and early fall at low flow conditions. It is envisioned that notification prior to starting will be given and a final report on total yards moved and amount of alkaline material used will be submitted after construction is completed.

Work Plan

1) Build sediment catchment traps as needed to contain material during excavation.
2) Load and haul tailings material to Tailings Pond #4 at the Mayflower Mill.
3) Add pH neutralizing material to tailings.
4) Regrade alluvial fan to blend in with surrounding topography.

Analysis

Removal of the tailings from rain, snow melt and streamflow with capping at Tailings Pond #4 with pH adjustment is a Best Management Practice which will be used to minimize impacts to waters of the State.

Monitoring

Due to the close proximity and the high flow which occurs in the Animas River, no monitoring is contemplated for this project. In lieu of monitoring at this location, the tributary mouth will be sampled on a rotating basis with the U. S. Bureau of Reclamation. Monitoring reports will be submitted by the 28th of the month after the analysis is received as well as with the quarterly reports and sent to both the Water Quality Control Division and the Division of Minerals and Geology.

Budget

SGC will fund this program unless other property owners choose to commit funding to this project.

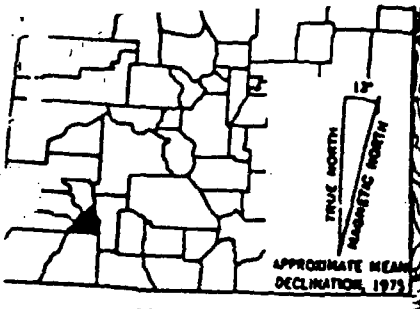
Description of Land Use

This remediation work plan is intended to use Best Management Practices on the site to conform with surrounding land use policies for:

1) Land stabilization, limited rangeland and limited wildlife habitat to approximately resemble a mountain park ecosystem consistent with bordering undisturbed areas.
2) The conversion of facilities, usable for purposes other than for mining, to alternate uses and preserve facilities of historic interest.

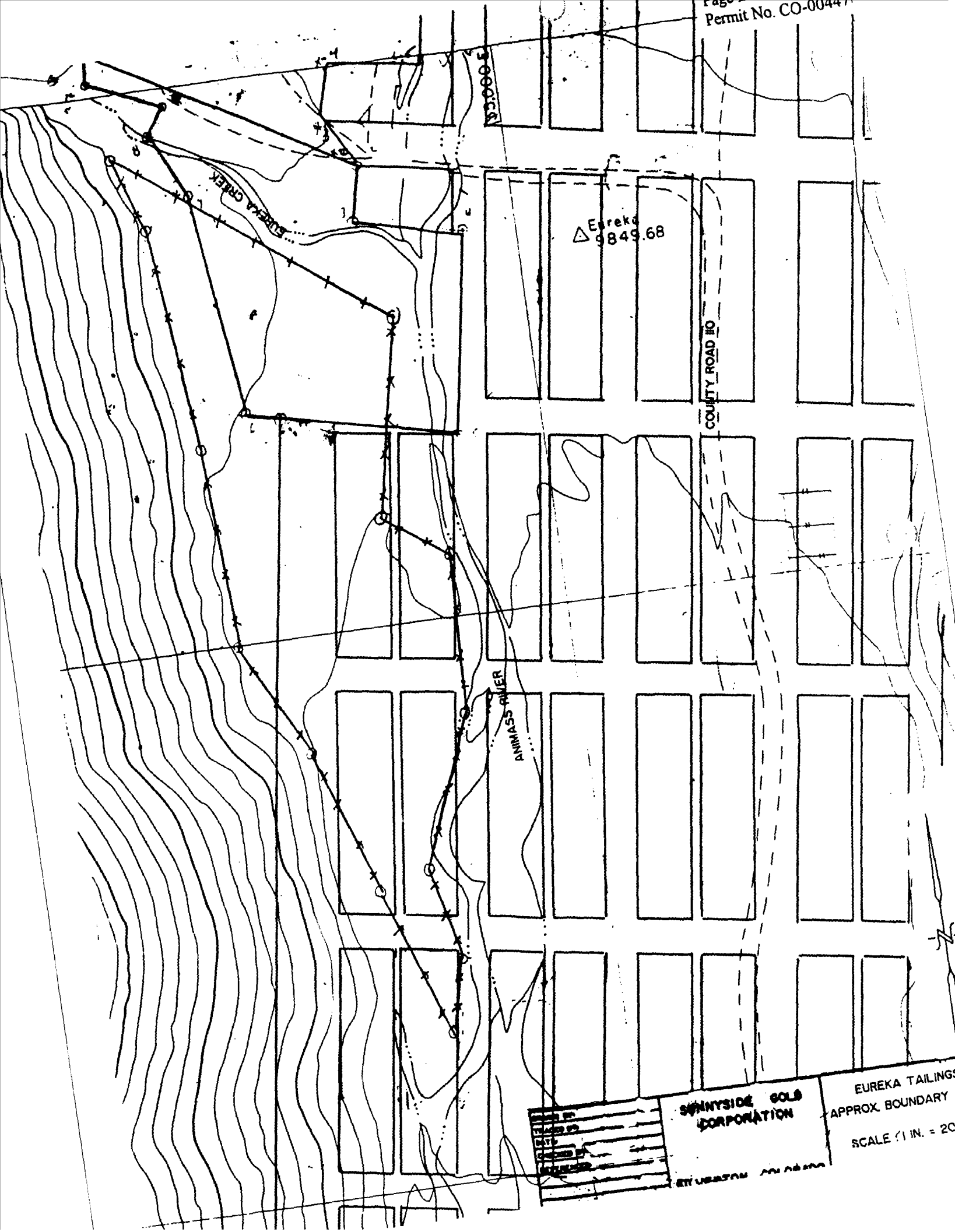
6. Consistency with Other Plans

There are no other remediation plans for this property. Consolidation of the tailings material at Tailings Pond #4 is consistent with Sunnyside Gold Corporation's Colorado MLR Permit M-77-378.



LOCATION DIAGRAM

SUNNYSIDE GOLD CORP.
SAN JUAN COUNTY, CO.


EUREKA CREEK
Eureka
9849.68
COUNTY ROAD 110
ANIMAS RIVER
SUNNYSIDE GOLD CORPORATION
EUREKA TAILINGS
APPROX. BOUNDARY

SITE CHARACTERIZATION DATA SUMMARY

SITE: EUREKA TAILINGS

SITE CHARACTERIZATION DATA SUMMARY

SITE: EUREKA TAILINGS

MEDIA: SOILS

Analysis Method	Sample Description	Sample Date	DATA SOURCE	pH s.u.	Al ppm	Cd ppm	Cu ppm	Fe ppm	Mn ppm	Pb ppm	Zn ppm	COMMENTS
1:1 Water Bath	Large pond tailings				<0.01	0.037	0.03	0.22	18	0.26	7.4	
Modified 1312 TCLP					<0.01	0.005	0.006	<0.05	3.62	0.06	0.72	
Total Metal Conc.				5.8	5700	7.7	520	9450	34500	6600	2070	
1:1 Water Bath					<0.01	1.02	0.56	0.12	253	1.7	85	
Modified 1312 TCLP					<0.01	1.02	0.172	0.17	14.4	4.52	7.2	
Total Metal Conc.				5.9	9000	12.3	815	14900	34500	7350	3610	

SITE CHARACTERIZATION DATA SUMMARY

SITE: **EUREKA TAILINGS**

RAINFALL DATA: Source Silverton Weather Station

YEAR	Rainfall inch		Snow inch	Moisture as Snow inch	Total Moisture inch
June '91-May '92	09-Jan-00		134.75	11.58	21.1
June '92-May '93	09-Jan-00		260.50	12.89	22.71
June '93-May '94	07-Jan-00		130.50	10.03	17.45

Mine Remediation Plan: Gold Prince Mill Tailings and Waste Dump

Remediating Party: Sunnyside Gold Corporation
P.O. Box 177
Silverton, CO 81433

contact William B. Goodhard
Resident Manager

1. Description of Mining Activities

Physical Description of Conditions

The site is a historic mine and mill which operated around the turn of the century. Prior to the ore being shipped to Animas Forks via aerial tram, it appears that some milling was done on site. The historic milling activity left a small tailings pond which is partially uncovered and allows for snowmelt and rain waters to cross, and potentially pass through the tailings. Waste dumps occurring on the property and bordering the stream also are not covered. The measured estimate of tailings and waste rock is 2050 cubic yards. The number one portal has a closure bulkhead in place to prevent entry; however, it needs to be reinforced to create a water retaining bulkhead. The flow through the mine workings would then be reduced as the tunnel will no longer be a natural drain for the overlying area. It is possible that the water could back up and flow into the Sunnyside Mine via old drifts and raises. This water is of similar or better quality than that projected to flow into the mine pool from other sources and the quantity is relatively insignificant in comparison. Therefore, no adverse impact would be anticipated if this were to occur.

General Description of the Mining Site

The site is located from Silverton, Colorado by taking CO Highway 110 towards Animas Forks, passing through The ghost town of Eureka, then up Placer Gulch, see attached location map.

The specific history of the site is not known by Sunnyside Gold Corporation. The Gold Prince was operated around the turn of the century with the ore trammed to the ghost town of Animas Forks. As evidenced by the mill foundation some milling took place onsite. The total disturbance is 2.1 acres.

Identification of Lands

Surface tailings pond and mine waste dumps located at head of Placer Gulch, San Juan County, Colorado. Work also to be done for closure of #1 level of Gold Prince Mine. Lands are included in SGC's Stormwater Permit #COR-040061. See attached general location map and site map.

Latitude 37 degrees 55 minutes Longitude 107 degrees 36 minutes

Identification of the Waters of the United States Potentially Affected

Water flows from above the property into Placer Gulch and joins the Animas River at Animas Forks. See attached map.

2. Site Map

Attached

3. Stormwater Management Controls

Sediment catchment traps will be built to prevent water from carrying sediments to streams during the course of the project.

Relocation of the waste and tailings will be done using practices which will prevent spillage of materials.

4. Inspection and Record Keeping Procedures

The Manager or a member of the Technical Service Department will inspect this area on a regular basis during removal and other work activities. Reports will be prepared quarterly. After remediation work is completed, there will be periodic inspections with quarterly reporting until permit release. Prior to remediation efforts, the area will be photographed and the photographs will be submitted with the first quarterly report.

Monitoring

Monitoring points will be upstream and downstream at this project site as well as flows from the adits and dumps. Monitoring will start prior to remediation work and continue until two years after the project is completed. Monitoring will occur four times yearly with at least one at high flow and two at low flow and will be submitted by the 28th day of the month following receipt of analysis as well as with the quarterly reports. All samples taken will be analyzed for dissolved metals Zn, Fe, Al, Cd, and CU, total sulfate, field pH as well as flow measurements.

Reports

SGC will notify WQCD prior to work starting. Prior to installation of hydraulic seals, SGC will submit seal designs to WQCD. SGC will submit quarterly reports with photographs for this project. Once all reclamation activities are complete a final report will be submitted. Reports will be sent to Water Quality Control Division and Division of Minerals and Geology. This report will include activities to date as well as planned activities for future work.

5. Mine Remediation Plan

Legal Right to Enter and Conduct Activities

This project is on property owned by Sunnyside Gold Corporation.

Remedial Goals and Objectives

Cleanup of historic mill tailings and mine dumps with removal from contact with rainwater and snowmelt in order to reduce potential impact to the Animas River from heavy metals.

Site Loading Estimate

For all of the remediation projects, and based on limited information, the site loading estimate for each project site was based on:

Adits-

Using available data, zinc loading was calculated based on the average flow and average zinc values.

Mine Waste Dumps and Tailings Piles-

Site composite soil samples were tested using a water bath extraction. This test consists of exposing a 1:1 ratio by weight of material to deionized water. The mixture is briefly mixed then allowed to set for 30 minutes. The sample was then filtered (0.45 micron) and analyzed for metals.

Annualized loading was calculated using rainfall data (proportionally adjusted for site elevation between the Silverton and Red Mountain weather stations), exposed area of waste dump or tailings site and loading based on 1:1 water bath test results. For comparison to adit flow loadings projects, the annualized loading was converted to an average daily loading.

Based on these assumptions and procedures, SGC estimates that the average daily loading for this site may be as much as 0.4 pounds of dissolved zinc per day. SGC is under no obligation to defend these estimates and they should only be used as an estimate. SGC does not represent that its mitigation project at this site will remove any specific percentage of metals loading from this site: the loading estimate contained herein does not form the basis of an enforceable permit obligation.

Description of Project

The surface tailings and waste rock will be removed and consolidated and the pH adjusted to near neutral by addition of lime or limestone. A suitable relocation area for tailings and waste rock will be built onsite. The onsite relocation area will have a diversion trench established around it to isolate the material. All surface soils will be salvaged and used for final capping. Final cap thickness will depend on the amount of soil available for salvage, 14-16" minimum is preferable. Construction of the relocation site will conform as near as possible to the site topography with maximum slope ratios of 2:1. The relocation area will be located as far away from streams as practical. Once all material is consolidated, the area will be capped with the salvaged soils, amendments added, seeded and mulched. All surface disturbances will be reseeded. It is possible that a 404 permit from the Army Corps of Engineers may need to be obtained before performing this work. This plan is also subject to notification requirements, for disturbance of Historical Mining Sites, to the board of the San Juan County Commissioners.

At the portal, the closure bulkhead will be reinforced with concrete and grouted to prevent water from flowing out the portal. The tunnel would then no longer be a drain for the near surface fractures in the area. Surface disturbances will be treated with soil amendments and reseeded.

The property has some building foundations on it and may be deemed as historic. SGC will preserve these structures provided that the mine waste can be economically removed without major damage or demolition of structures.

Work Plan

1) Locate acceptable area away from stream with enough soil available for cap.
2) Strip and stockpile soils.
3) Build upland diversion ditches to prevent run on conditions.
4) Install catchments as needed to contain material during excavation.
5) Pick up and relocate waste and tailings to disposal area.
6) Remove catchments.
7) Cap relocation area with salvaged soil.
8) Apply soil amendments, seed and mulch all areas disturbed during project.

Analysis

Consolidation, improvement of pH conditions and isolation from snowmelt and rainwater is a Best Management Practice which will prevent waters from coming into contact with the tailings and mine waste rock. Preventing water from exiting the mine portal will decrease the area drained by the adit and let the near surface water return to its natural flow paths. This project may help in reducing dissolved zinc as well as other dissolved metals in the Upper Animas Basin.

Monitoring

Monitoring points will be upstream and downstream at this project site as well as flows from the adits and dumps. Monitoring will start prior to remediation work and continue until two years after the project is completed. Monitoring will occur four times yearly with at least one time at high flow and at least two at low flow and will be submitted by the 28th day of the month following receipt of analysis as well as with the quarterly reports. All samples taken will be analyzed for dissolved metals Zn, Fe, Al, Cd, and CU, total sulfate, field pH as well as flow measurements.

Contingency Plans

Removal and isolation of tailings and mine waste is planned onsite. Should this not be realistic due to groundwater conditions, SGC will haul the material to Tailings Pond #4 at the Mayflower Mill. Under SGC's MLR permit M-77-378 this material can be consolidated into Tailings Pond # 4.

Budget

SGC will fund this program.

Description of Land Use

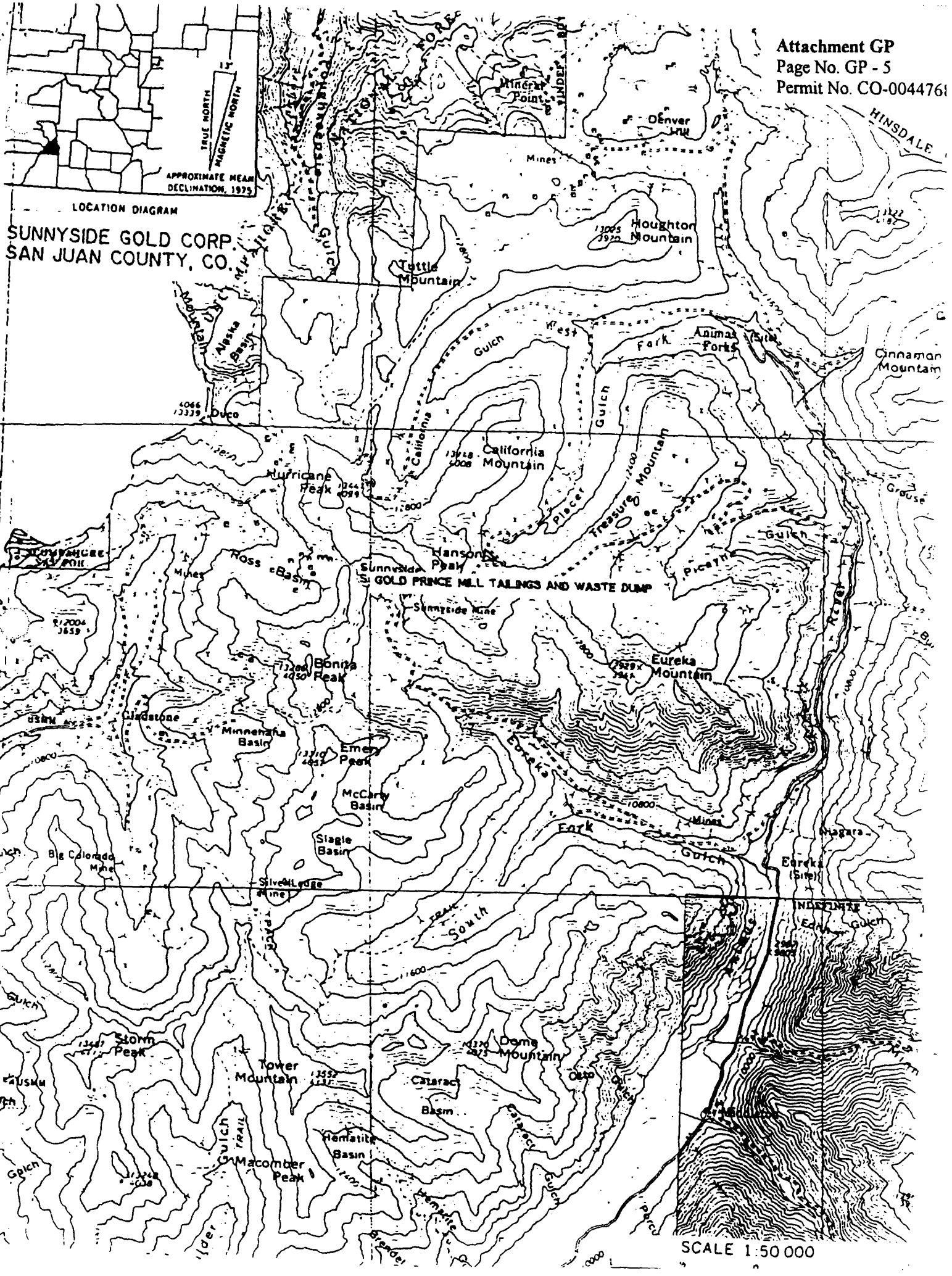
This remediation work plan is intended to use Best Management Practices on the site to conform with surrounding land use policies for;

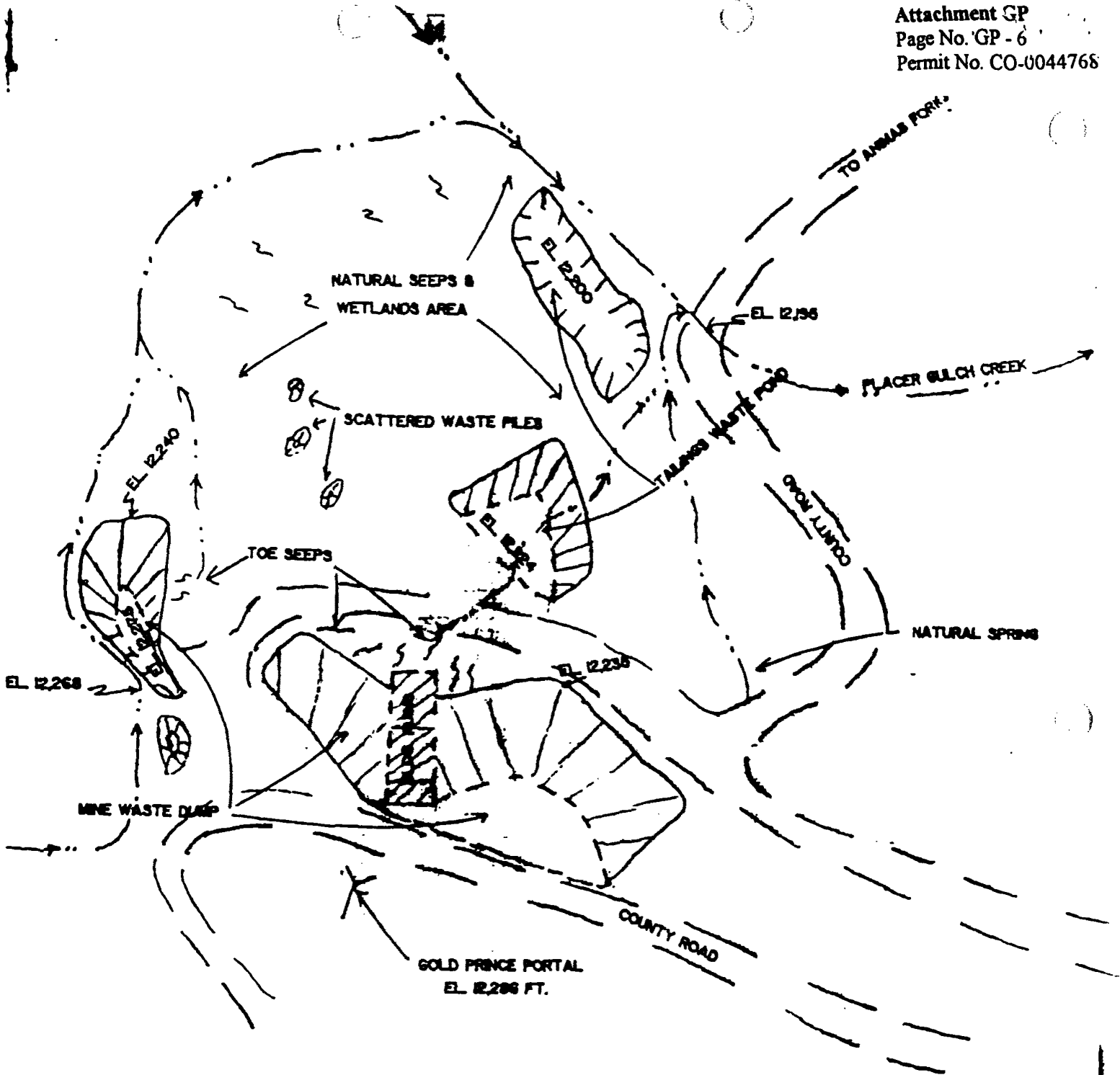
1) Land stabilization, limited rangeland and limited wildlife habitat tp approximately resemble a mountain park ecosystem consistent with bordering undisturbed areas.
2) The conversion of facilities, usable for purposes other than for mining, to alternate uses and preserve facilities of historic interest.

Attachment Available From WQCD upon Request
"Tunnel Bulkheads for Acid Mine Drainage", Einarson and Abel, Proc. Int'l Symp on Unique Underground Structures, 1990

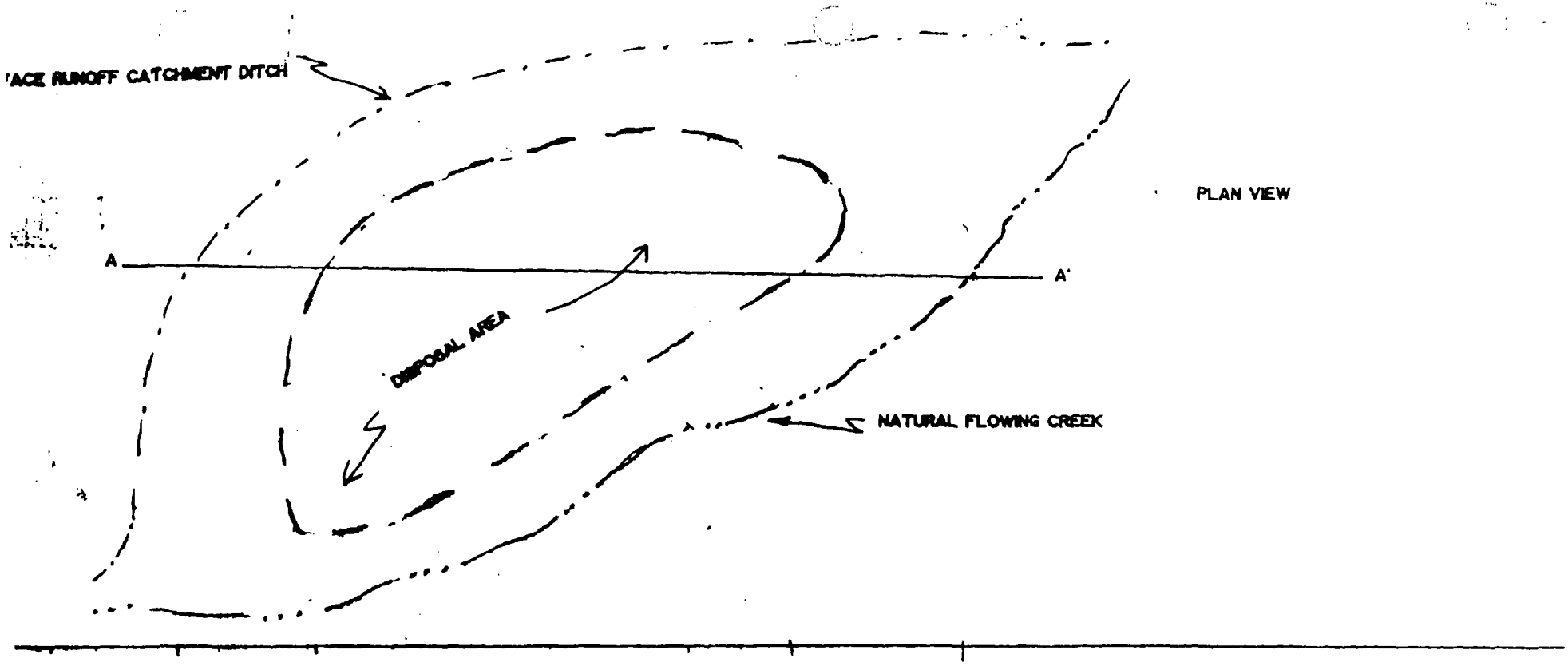
6. Consistency with Other Plans

There are no other remediation plans for this property. The current stormwater permit held by Sunnyside Gold Corporation will be terminated after this permit is issued to avoid duplicity.


LOCATION DIAGRAM
APPROXIMATE MEAN DECLINATION, 1975
TRUE NORTH
MAGNETIC NORTH
SUNNYSIDE GOLD CORP.
SAN JUAN COUNTY, CO.
Mineral Point
Denver Mines
Houghton Mountain
Tuttle Mountain
Alaska Basin
Duco
California Mountain
Hurricane Peak
Hanson Peak
Sunnyside Peak
GOLD PRINCE MILL TAILINGS AND WASTE DUMP
Sunnyside Mine
Ross Basin
Bonita Peak
Eureka Mountain
Gladstone
Minnehaha Basin
Emery Peak
McCarty Basin
Slagle Basin
Big Colorado Mine
Silver Ledge Mine
Storm Peak
Tower Mountain
Dome Mountain
Cataract Basin
Hematite Basin
Macomber Peak
Treasure Mountain
Cinnamon Mountain
Animas Forks
Eureka (Site)
Niagara
Grouse
Picayne
Placer
Eureka
South
Fork
Gulch
Creek
HINSDALE
SCALE 1:50 000

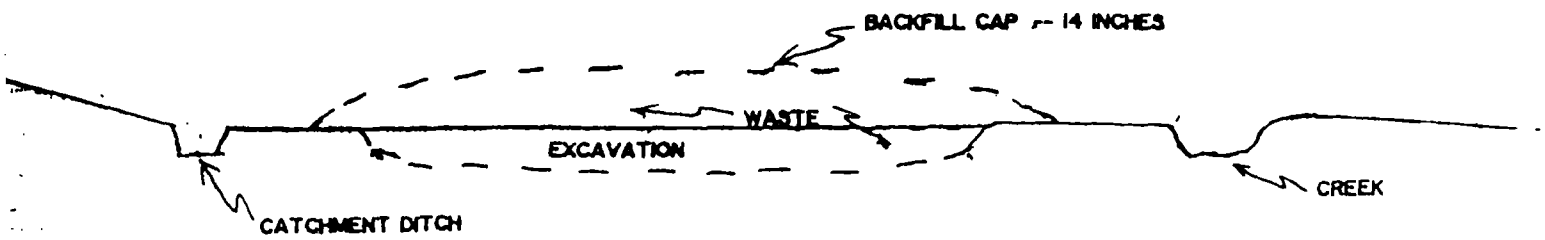


	SUNNYSIDE GOLD CORPORATION	GOLD PRINCE MINE
	SILVERTON, COLORADO	SCALE : 1 IN. = 100 FT.



PLAN VIEW

CROSS SECTION A - A '



IDEAL WASTE DEPOSIT DISPOSAL AREA

SUNNYSIDE GOLD CORPORATION

GOLD PRINCE MINE

NOT TO SCALE

Attachment GP
Page No. GP - 7
Permit No. CO-00447(

SITE CHARACTERIZATION DATA SUMMARY

SITE: GOLD PRINCE MINE

SITE CHARACTERIZATION DATA SUMMARY

SITE: GOLD PRINCE MINE

MEDIA: SOILS

Analysis Method	Sample Description	Sample Date	DATA SOURCE	pH	Al	Cd	Cu	Fe	Mn	Pb	Zn	COMMENTS
				s.u.	ppm	ppm	ppm	ppm	ppm	ppm	ppm	
1:1 Water Bath	Tails @ Creek				<0.1	3.02	1.35	0.05	343	2.24	99	
Modified 1312 TCLP	Tails @ Creek				<0.1	3.02	0.231	<0.05	28.4	2.9	9.4	
Total Metal Conc.	Tails @ Creek			6	7920	42	1400	19600	54200	1610	8020	
1:1 Water Bath	Light Tail Pond				<0.1	0.052	0.027	<0.05	53	<0.005	15.9	
Modified 1312 TCLP	Light Tail Pond				<0.1	0.0004	0.002	<0.05	8.4	<0.005	0.68	
Total Metal Conc.	Light Tail Pond			5.1	10800	73	1170	27500	105000	15100	19000	
1:1 Water Bath	Black Tail Pond				3.9	0.013	0.013	<0.05	16.3	<0.005	5.5	
Modified 1312 TCLP	Black Tail Pond				0.41	<0.002	0.003	<0.05	2.93	<0.005	0.56	
Total Metal Conc.	Black Tail Pond			5.7	1400	40	620	19600	59000	460	11000	

Attachment GP
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Permit No. CO-0044768

SITE CHARACTERIZATION DATA SUMMARY

SITE: GOLD PRINCE MINE

MEDIA: WATER

Sample	Filt./Unfilt.	Flow GPM	Sample Date	pH s.u.	Al mg/l	Cd mg/l	Cu mg/l	Fe mg/l	Mn mg/l	Pb mg/l	Zn mg/l	Comments
PG-1	Filt.	22	07-Sep-94	7.76	<0.1	<0.002	0.001	<0.05	<0.02	<0.005	0.37	Mainstem above site.
PG-2	Filt.	15	07-Sep-94	7.09	0.60	<0.002	0.002	<0.05	<.02	<0.005	0.51	Mainstem below site.
GP-2	Filt.	1	07-Sep-94	7.88	<0.1	<0.002	0.002	<0.05	0.02	<0.005	0.78	Stream across black tails.
GP Portal	Unfilt.	1	09-Aug-93	6.54		<0.002	<0.001	1.88	7.19	0.023	0.57	Adit flow
GP Portal	Filt.	0	34584	6.15	0.20	0.012	0.059	<0.05	26.9	<0.005	7.63	

Attachment GP
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Permit No. CO-004476

SITE CHARACTERIZATION DATA SUMMARY

SITE: **GOLD PRINCE MINE**

RAINFALL DATA: *Source Idarado Mining Company--Red Mountain Weather Station*

YEAR	Rainfall inch		Snow inch	Moisture as Snow inch	Total Moisture inch
June '91-May '92	8		444.5	35.56	43.56
June '92-May '93	8.8		545.5	49.89	58.69
June '93-May '94	7.1		330.5	26.12	33.22

Attachment GP
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Permit No. CO-0044765

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Mine Remediation Plan: Longfellow Koehler Project

Remediating Party: Sunnyside Gold Corporation
P.O. Box 177
Silverton, CO 81433

contact William B. Goodhard
Resident Manager

1) Description of Mining Activities

Physical Description of Conditions

The project area is just east of Highway 550 and just south of Red Mountain Pass, see attached location map. The climate can best be described as high alpine at timberline. The winter season is long with a very short summer season. The topography is generally steep and rugged. Elevations range from 10,400' in the valley to the south of the project to 12, 400' to the east of the project area. The elevation at the project area is 11,160'.

ANNUAL MOISTURE

			MOISTURE	TOTAL
	RAINFALL	SNOW	AS SNOW	MOISTURE
YEAR	INCH	INCH	INCH	INCH
6/91-5/92	8.0	444.5	35.6	43.6
6/92-5/93	8.8	545.5	49.9	58.7
6/93-5/94	7.1	330.5	26.1	33.2

The project is located within a belt of chimney type ore deposits along the northwesterly rim of the Silverton Caldera. All volcanic rock types in this area are either from the Burns or Henson Formations. There are intrusive rocks found along the concentric and radial faults associated with the volcanic activity. The area in general is considered to be highly mineralized.

The project area consists of a shaft with a small access drift and corresponding waste dump, two collapsed discharging portals with corresponding waste dumps, two mine waste dumps (estimated to contain 20,000 cubic yards) and a low pH natural pond with sediments containing metal precipitates. All water flow through or across disturbances is exposed to pyrite and other heavy metals as well as the acidic conditions of the pond. The south collapsed adit has a general Northeasterly bearing toward Carbon Lake. The headwaters of Mineral Creek are a substantial contributor of dissolved Fe, Al and Zn as defined by the 1991-1994 sampling results of Water Quality Control Division. The site features are identified on the attached drawings.

General Description of the Mining Site

The project lies just east of Colorado Highway 550 on the south side of Red Mountain Pass. See Attached Map. This mine operated prior to the mid 1950's with the ore being shipped to a custom mill.

Identification of Lands

Mine portals, mine shaft and waste dumps located near top of Red Mountain Pass, on the east side of Colorado Highway 550, San Juan County, Colorado. See attached location and site map.

Latitude 37 degrees 54 minutes Longitude 107 degrees 43 minutes

Identification of the Waters of the United States Potentially Impacted

Headwaters of North Mineral Creek. Mineral Creek flows into the Animas River below Silverton Colorado. See attached map.

2) Site Map
Attached

3) Stormwater Management Controls
Prior to draining of the pond, the pH will be raised to minimize the metal content of the pond water. Downstream sediment catchments will be installed to minimize downstream effects during remediation.

4) Inspection and Record Keeping Procedures
The Manager or a member of the Technical Services Department will inspect this project prior to and during remediation efforts on a regular basis. Quarterly reports and photographs will be sent to both the Colorado Water Quality Control Division and the Colorado Division of Minerals and Geology. Prior to remediation efforts the area will be photographed and the photographs will be submitted with the first quarterly report. Reports for this project will include finalized engineering drawings, with estimates of operation, maintenance and replacement requirements for a passive bio mass treatment system.

Once all reclamation activities included in the plan are complete, a final report will be submitted.

Monitoring

Monitoring points for this project will consist of upstream, downstream as well as flows from adits, seeps and dumps. Monitoring will start in 1996 and continue until two years after the project is completed. Monitoring for run on, runoff and waste isolation will occur four times yearly, and particularly once in high flow and twice in low flow. All samples taken will be analyzed for dissolved metals Zn, Fe, Al, Mn, Cd, and Cu: total sulfate, hardness and a field pH will be taken as well as field measurements for flow. All monitoring results will be submitted by the 28th day of the month following receipt of analytical results as well as included in the quarterly reports.

5) Mine Remediation Plan

Legal Right to Enter and Conduct Activities

SGC has verbally discussed this concept in general terms with the property owner. No work will commence until an acceptable access agreement is reached.

Remedial Goals and Objectives

Reduction of dissolved zinc (70%) flowing past the M-02 sampling point at the Koehler Longfellow site on Red Mountain Pass. Actions taken to reduce dissolved zinc will also reduce low pH, metal laden waters flowing into the headwaters of North Mineral Creek by:

(1) design of a passive bio treatment system to be given to WQCD;
(2) reduction of acidity in the headwaters by isolating or limiting abilities of waters to react with pyrite and other sulfide minerals;
(3) reduction of exposure to waste material by snowmelt, rainwater and intermittent streams; and
(4) visually reclaim area to accepted reclamation standards.

Site Loading Estimate

Loading from this site is due to the intermixing of adit flows, drainage from the small basin and stormwater through a common discharge point (M-02), that has been monitored multiple times. The average results of the monitoring of M-02 for quantity and quality was used to estimate the impact of dissolved zinc from adit flows from this site. The average M-02 loading information was used and the assumption made that the same percentage attributable to waste dumps during a SGC sample session at the site is applicable to this average loading.

Based on these assumptions and procedures, SGC estimates that the average daily loading for mine waste impacts at this site may be as much as 32.5 pounds of dissolved zinc per day. SGC is under no obligation to defend these estimates and they should only be used as an estimate. SGC does not represent that its mitigation project at this site will remove any specific percentage of metals loading from this site: The loading estimate contained herein does not form the basis of an enforceable permit obligation.

Description of Project

Hydrologic Controls

Infiltration Controls

The upland property has not been examined by SGC to see if there are any open stopes, glory holes or other subsidence features that may be adding water to the portal flows. The following will be done to determine if infiltration controls have potential to reduce Adit flows.

(1) Thorough examination of the surface looking for features which may be diverting water through mine workings.

(2) Should any features be found they will be studied to see if run on run off controls are practicable.

(3) SGC will implement controls such as ditching, to prevent infiltration where practicable.

Site Run On Controls

There exist two possible sites for run on controls at the portal area. The first source of water flows from the drainage area and pond to the North, around the Longfellow Shaft and contacts dump material before flowing into the lower pond at the portal area. The second source of flowing water needs to be evaluated but may be flowing from U.S. Basin. This stream flows next to the South (Koehler) Adit and contacts the dump material. Both sources can be best handled by simple diversion in a lined ditch to prevent any contact with contaminated water or mine waste material. The ditch water will be recombined below the site named M-02.

Mine Waste Remediation

The waste dumps will be moved and isolated from portal flows, intermittent stream flows and the pond. SGC will move and consolidate the dumps and adjust their pH to near neutral, by addition of lime, limestone or another acceptable product, for stabilization. The measured estimate of waste is 20,000 cubic yards.

Preferably an isolation site can be found onsite. As an alternative, the dumps will be relocated to SGC's Tailings Pond #4. Prior to consolidation either onsite or offsite, the pH will be adjusted to near neutral. Once removal and consolidation is completed, the material will be capped with 14-16" of soil, provided that amount of soil is available, and planted in order to prevent direct contact with water.

Surface disturbances will be pH adjusted with the use of limestone addition and planted. SGC will apply for a 404 permit from the Army Corp. of Engineers for the work in the stream.

Removal of buildings will be required on the South (Koehler) dump. This will require working with the San Juan County Historical Society. Planned activities would include historical recordation prior to removal. It is intended to leave all other structures intact including the buildings associated with the Longfellow Shaft.

Mine Drainage Treatment Design

Improvement in quality in the flows from the adits, natural seeps and the stormwater runoff poses a difficult problem due to the combination of low pH and high metals content. At this time it appears that the best solution is a passive bio treatment system. SGC will collect and sample waters from the underground sources to be treated. The water will be bench tested to provide data that will be used in the design of a passive bio treatment system to increase pH and reduce base metal concentrations. See attached paper on the passive bio treatment system. While SGC has agreed to complete this testing and project design, installation of an adit flow treatment project is not part of this Mine Remediation Work Plan or SGC's agreement to do mitigation projects.

Passive bio treatment Design Criteria

Bench scale test results will provide design parameters that will utilize the space occupied by the current pond. The design will focus on establishing the longest practicable life for the installation.

During the design stage SGC will collect additional background information monthly, when the site is accessible. Information collected will include flow, pH, temperature, dissolved metals and hardness. Dissolved metals will be limited to Zn, Fe, Al, Mn, Cd, and Cu . A field pH will be taken as well as flow measurements during sampling. These and any other results from parameters monitored for design of the system will be included in the design report given to WQCD.

Part of the design will include a monitoring program that can be used to determine metals reduction. The following will be considered in the design of the passive bio treatment system:

(1) Volume of water to be treated. High and low flow characteristics.
(2) Water temperature, pH and hardness.
(3) Metal loadings and precipitation characteristics.
(4) Retention time for passive system to react and deposit metals.
(5) Life of passive treatment cell.
(6) A target removal of seventy percent dissolved metals reduction from the project site.
(7) Conceptual plan for replacement of the passive bio treatment mass.

(8) Character of spent material.
(9) Designed to operate with the simplest and least frequent operation and maintenance requirements.
(10) Climate and access.

Work Plan
1996

(1) Evaluate baseline water quantity and quality at M-02, portals and other seeps.
(2) Collect and bench scale test for passive bio treatment systems.
(3) Open portals for evaluation of discharge conditions.
(4) Determine quantity and quality to be treated by passive bio treatment system.
(5) Examine surface subsidences for run on control.
(6) Design run on control practices.
(7) Design lined flow around ditches.
(8) Design passive bio treatment system.
(9) Investigate favorable location for onsite relocation of mine wastes.
(10) Record historical buildings and artifacts that will be affected by this project.
(11) Obtain permits, if needed, from San Juan County and Corps of Engineers.
(12) Install downstream sedimentation controls to prevent pollution during reclamation.
(13) Start and complete as much of the onsite mine waste mitigation work as possible.

1997 and on

(1) Implement BMP run on controls where practicable.
(2) Stabilize historical buildings that will remain on site.
(3) Continue relocation of mine wastes.
(4) Dewater settling pond and remove sediments.
(5) Submit a completed design for a passive bio treatment system to WQCD.
(6) Construct flow around ditches.
(7) Reclaim and revegetate waste areas using cap for areas where relocation is not possible.
(8) At the completion of the studies and reclamation work, SGC will provide $200,000 to a fund as directed by WQCD, which funds will be utilized to fund water quality improvements of remedial projects to address impacts of past mining activities in the Upper Animas Basin.
(9) Calculate loading reduction due to the waste removal / run on controls.

Analysis

The headwaters of North Mineral Creek currently have a low pH and are laden with heavy metals. Removal and consolidation of the mine dumps (including pH stabilization) will isolate this material from direct contact with rain waters, snow melt and flows from intermittent streams and neutralize the acid generation process already in progress. These Best Management Practices will improve the conditions of the headwaters of Mineral Creek.

Should a passive bio treatment system be installed by another Party (which installation is not part of this project) it may provide an effective approach to treatment of long term acid mine drainage and may reduce the need for and expense of active chemical treatment and minimize sludge disposal requirements.

Monitoring

Monitoring points for this project will consist of upstream, downstream as well as flows from adits, seeps and dumps. Monitoring will start in 1996 and continue until two years after the project is completed. Monitoring for run on, runoff and waste isolation will occur four times yearly, and particularly once in high flow and twice in low flow. All samples taken will be analyzed for dissolved metals Zn, Fe, Al, Mn, Cd, and Cu: total sulfate, hardness and a field pH will be taken as well as flow measurements. All monitoring results will be submitted by the 28th day of the month following receipt of analytical results as well as included in the quarterly reports.

Budget

Sunnyside Gold Corporation will fund this project.

Description of Land Use

This remediation work plan is intended to use Best Management Practices on the site to conform with surrounding land use policies for:

1) Land stabilization, limited rangeland and limited wildlife habitat to approximately resemble a mountain park ecosystem consistent with bordering undisturbed areas
2) The conversion of facilities, usable for purposes other than for mining, to alternate uses and preserve facilities of historic interest.

Contingency Plans

Prior to draining of the pond, the pH will be raised to minimize the metal content of the pond water. Downstream sediment catchments will be installed to minimize downstream effects during remediation.

If a favorable onsite location cannot be found for onsite relocation of mine wastes, the mine wastes will be trucked to SGC's Tailings Pond #4 at the Mayflower Mill. Under SGC's MLR permit (M-77-378) this material can be consolidated into Tailings Pond #4.

6) Consistency with Other Plans

There are no other remediation plans for this project. If consolidation of the waste is trucked to SGC's Tailings Pond #4, this would be a compatible use of the Tailings Pond as approved under SGC's MLR permit (M-77-378).

Water Standards and Use Classification

Identification

The Koehler / Longfellow area drains into Mineral Creek, Segment 8 of the Animas and Florida Sub-basin of the San Juan River. Segment 8 in turn flows into Segment 9b which flows into Segments 4a, 4b, 5a which are Animas River mainstem segments extending to the Southern Ute Indian Reservation boundary.

Classification

Segment 8 is designated as Use Protected and is classified for the following uses:
Recreation, Class 2; Agriculture.

Numeric Standards; Segment 8

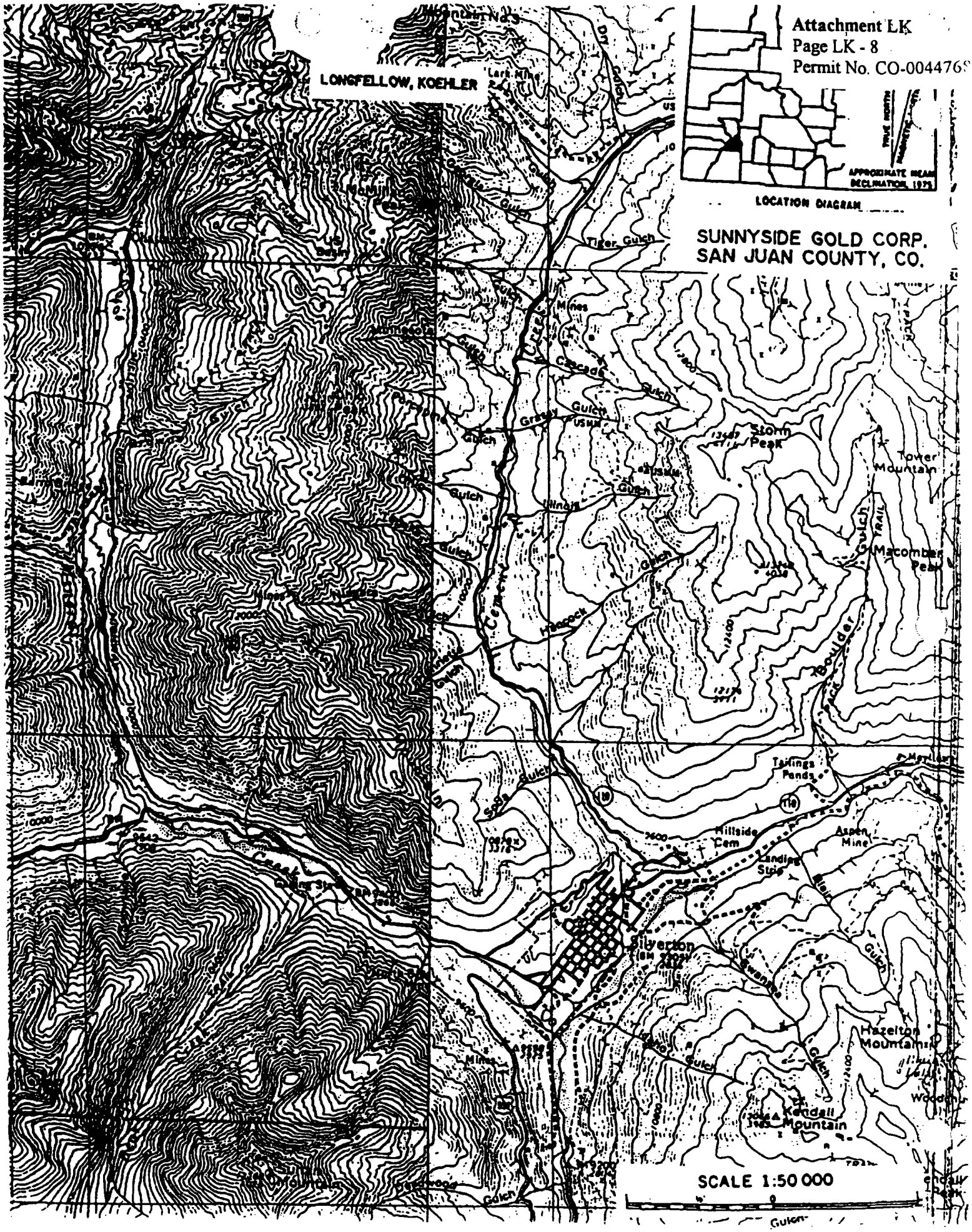
The standards below can be found in 3.4. classifications and Numeric Standards for the San Juan River Basin (5ccr 1002-8)

Physical and Biological Standards
pH 4.5-9.0 s.u.
Fecal Coliforms = 200/100 ml

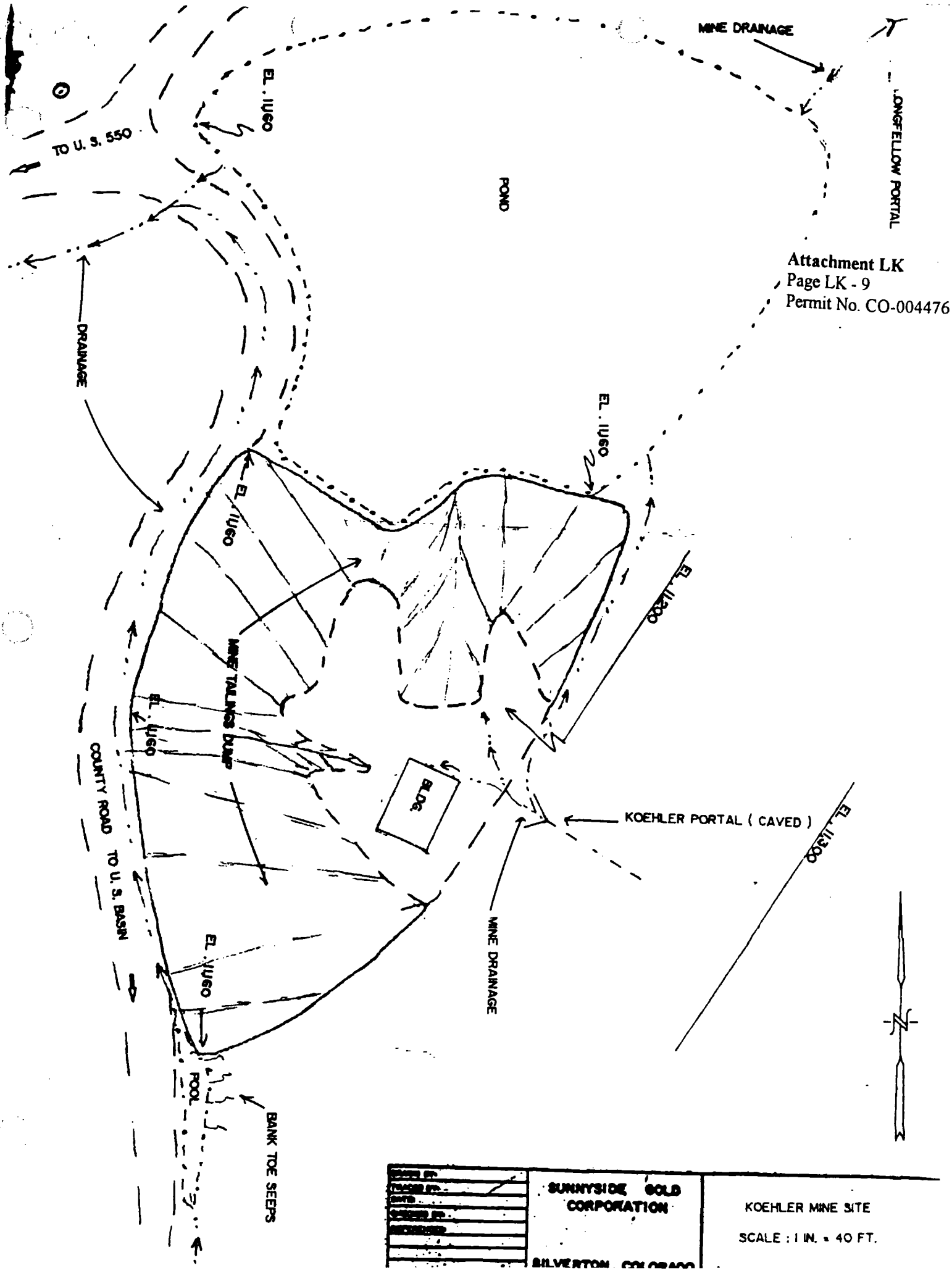
Metals
Effective until March 2, 1998 all metals standards have been set equal to the existing ambient quality as of February 14, 1995. Effective as of March 2, 1998 the concentration of dissolved aluminum, cadmium, copper, iron, lead, manganese and zinc that is directed toward maintaining and achieving water quality standards in segments 4a, 4b, and 9b of the Animas Basin.

Attachments Available From the WQCD Upon Request

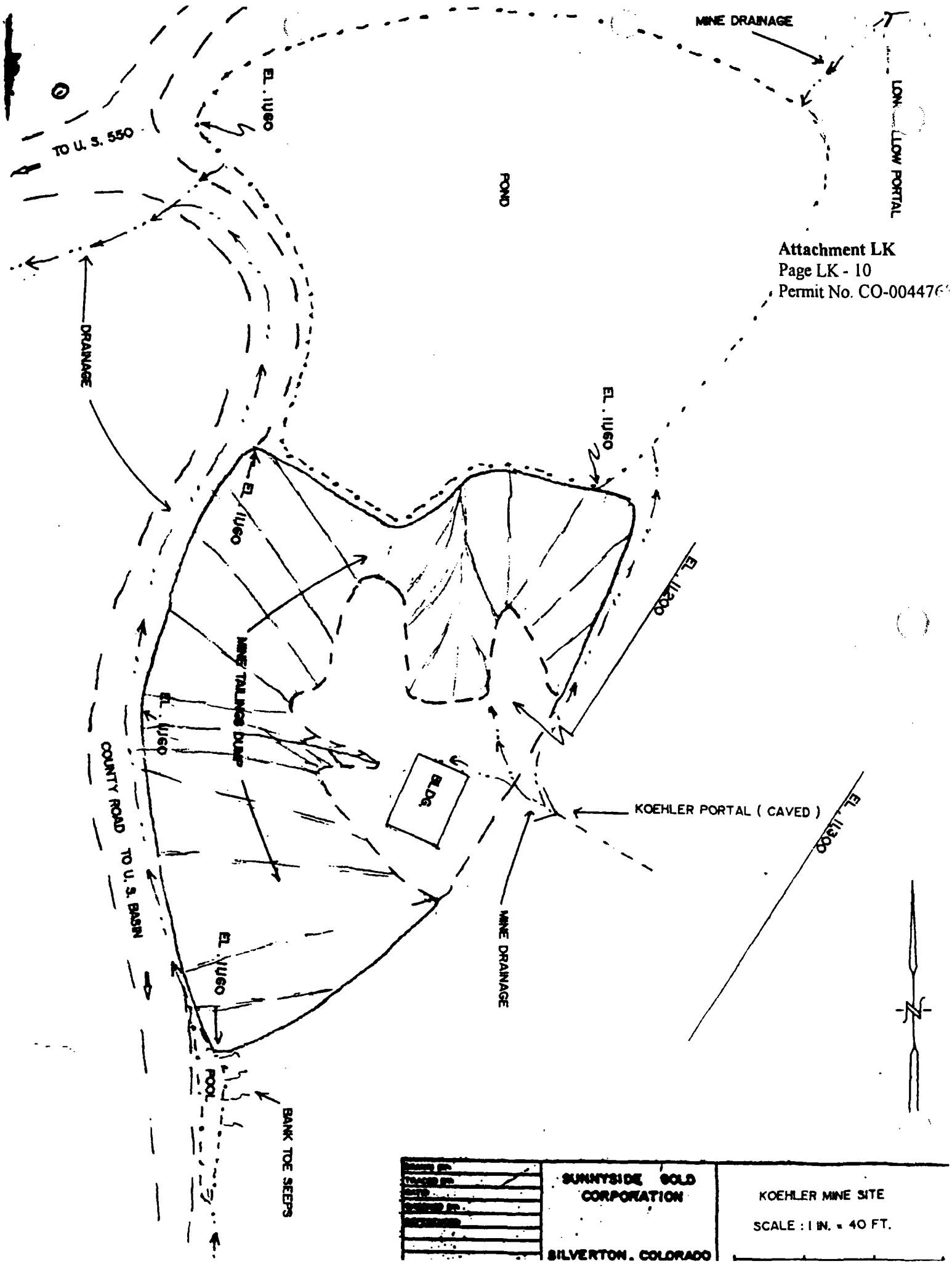
Design concept for the closure for the Longfellow Koehler Mine Complex



May-01-96 01:29P Sunnyside Gold Corp. 970 387 5310 P.02



Attachment LK
Page LK - 9
Permit No. CO-004476



Attachment LK
Page LK - 10
Permit No. CO-00447

SITE CHARACTERIZATION DATA SUMMARY

SITE: KOEHLER/LONGFELLOW

SITE CHARACTERIZATION DATA SUMMARY

SITE: KOEHLER/LONGFELLOW

MEDIA: SOILS

Analysis Method	Sample Description	Sample Date	DATA SOURCE	pH s.u.	Al ppm	Cd ppm	Cu ppm	Fe ppm	Mn ppm	Pb ppm	Zn ppm	COMMENTS
Modified 1312 TCLP	Dump 1	34919	CDPHE		2.7	0.022	2.6	51	0.049	3.1	4.2	
Modified 1312 TCLP	Dump 2	34919	CDPHE		3.2	0.014	2.2	26	0.032	4.4	4.1	
Modified 1312 TCLP	Dump 3	34919	CDPHE		7.9	0.011	5.2	67	0.02	3.8	3.6	
Modified 1312 TCLP	Dump 4	34919	CDPHE		0.19	<0.004	0.49	1.1	0.018	1.8	0.67	
Modified 1312 TCLP	Dump 5	34919	CDPHE		4.3	0.075	2	24	0.26	0.76	14	
1:1 Water Bath	Longfellow Dump	34554	SGC		51.6	0.158	21.1	535	76.2	2.95	50.6	
Modified 1312 TCLP	Longfellow Dump	34554	SGC		3.58	0.007	0.703	24	2.63	4.86	1.6	
Total Metal Conc.	Longfellow Dump	34554	SGC	1.7	3080	113	7570	106000	307	20800	10400	Composite dump sample
1:1 Water Bath	Pond Sediments	34554	SGC		29.00	0.113	0.407	51	90.5	1.24	20	
Modified 1312 TCLP	Pond Sediments	08-Aug-94	SGC		1.21	0.011	0.547	2.93	8.8	0.427	2.18	
Total Metal Conc.	Pond Sediments	08-Aug-94	SGC	2.9	6310.00	33	598	78100	1140	1520	1720.00	

SITE CHARACTERIZATION DATA SUMMARY

SITE: KOEHLER/LONGFELLOW

MEDIA: WATER

Sample	Filt./Unfilt.	Flow GPM	Sample Date	DATA SOURCE	pH s.u.	Al mg/l	Cd mg/l	Cu mg/l	Fe mg/l	Mn mg/l	Pb mg/l	Zn mg/l	Comments
M01	Unfilt	180	06-Sep-91	CDPHE	5.77	<	<	<	0.022	<	<	<	Headwater sample of Mineral
	Filt		06-Sep-91	CDPHE		<	<	<		<	<	<	Creek.
	Unfilt		23-Jun-92	CDPHE	7.04		<	0	0.014		<	<	
	Filt		24-Jun-92	CDPHE		<	<	<	<	<	<	0.01	
	Unfilt	13	14-Oct-92	CDPHE	6.85		<	0.005	0.026		<	0.04	
	Filt		14-Oct-92	CDPHE		<	<	<		<	<	0.02	
LFK07	Unfilt	2.244	34920	CDPHE	7.43	0.19	<	0.014	0.79	0.08	0.003	0.011	Background site upgradient from
	Filt		34920	CDPHE		<	<	0.011	0.16	0.036	<	0.009	Longfellow Shaft
RML-BG/ LFK07	Filt	5	34557	SGC	7.97	<0.1	<0.002	0.01	0.07	0.01	<0.005	<0.01	
M02	Unfilt	226.1952	33487	CDPHE	2.63	67	0.63	62	490	17	0.3	180	Combined flow from the Koehler/
	Filt		33487	CDPHE		67	0.63	62	490	17	0.3	180	Longfellow complex.
	Unfilt		33778	CDPHE	2.81		0.21	18	160		0.11	54	
	Filt		33778	CDPHE		14	0.15	14		3	0.088	40	
	Unfilt		33891	CDPHE	3		0.81	82	580		0.099	230	
	Filt		33891	CDPHE		85	0.81	82		26	0.101	230	
	Unfilt		34171	CDPHE	2.79		0.35	33	290		0.098	100	
	Filt	43.5336	34171	CDPHE		37	0.35	33	280	12	0.09	100	
	Unfilt	9.4248	08/09/95	CDPHE	2.44	52	0.45	53	420	14	0.073	130	
	Filt		34920	CDPHE		51	0.44	52	420	14	0.069	130	
	Unfilt	9.4248	10/05/95	CDPHE	2.64	130	1	110	910	37	0.28	310	
	Filt		34977.10526	CDPHE		60	0.45	54	430	17	0.14	140	
KDP-COM/ M02	Filt	14.8	34554.11569	SGC	2.26	76	0.33	58.9	427	27.6	0.24	167	
M34	Unfilt	15214.32	33486	CDPHE	6.17	2.2	0.0013	0.08	2.9	0.33	0.013	0.39	Mainstem Mineral Creek @ gaging
	Filt		33486.0	CDPHE		<	0.0	0.0	0.9	0.33	<	0.36	station.
	Unfilt	40077.84	33487.0	CDPHE	6.7	3.0	0.0	0.1	4.4	0.26	0.019	0.33	
	Filt		33487.0	CDPHE		0.7	0.0	0.0	1.4	0.25	<	0.28	
	Unfilt	52734	33488.0	CDPHE	7.1	1.4	0.0	0.1	2.6	0.18	0.012	0.24	
	Filt		33488	CDPHE		0.071	0.0006	<	0.44	0.17	<	0.22	
	Unfilt	50359.848	33490	CDPHE	6.75	0.9	0.0006	0.031	1.4	0.15	0.005	0.18	
	Filt		33490	CDPHE		<	0.0006	0.005	0.61	0.15	<	0.16	
	Unfilt	48560.16	33491	CDPHE	7.4	1.2	0.0006	0.08	1.6	0.17	0.006	0.2	
	Filt		33491	CDPHE		0.075	0.0006	<	0.5	0.16	<	0.18	
	Unfilt	157080	33778	CDPHE	7.2		0.00074	0.008	0.19		<	0.094	
	Filt		33778	CDPHE		<	0.00075	0.008	0.13	0.074	<	0.11	
	Unfilt	149899.2	33779	CDPHE	7.2		0.0009	0.029	0.97		0.007	0.15	
	Filt		33779	CDPHE		<	0.00077	0.007			<	0.12	
	Unfilt	152592	33780	CDPHE	7.1								
	Filt	14361.6	33891	CDPHE	6		0.0014	0.055	4.8		0.0093	0.4	
	Unfilt		33891	CDPHE		<	0.0013	0.016	3.4	0.41	<	0.39	

Attachment LK
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Permit No. CO-0044

SITE CHARACTERIZATION DATA SUMMARY

SITE:	KOEHLER/LONGFELLOW												
	Filt	13912.8	33892	CDPHE	6.1		0.0013	0.054	4.5		0.0074	0.39	
	Unfilt		33892	CDPHE		<	0.0013	0.018	3.1	0.42	<	0.37	
	Unfilt	78540	34170	CDPHE	7.4		0.00043	0.035	0.91		<	0.12	
	Filt		34170	CDPHE		<	0.00042	<	0.4		<	0.16	
	Unfilt	78540	34171	CDPHE	6.75		0.00057	0.016	0.9		<	0.12	
	Filt		34171			<	0.00043	<	0.28	0.11	<	0.1	
A72	Unfilt	58792.8	33486	CDPHE	6.2	1.2	0.0014	0.029	1.5	0.55	0.011	0.41	Mainstem Animas River @
	Filt		33486	CDPHE		<	0.0014	0.005	0.39	0.55	<	0.36	gaging station below Silverton.
	Unfilt	83028	33487	CDPHE	6.3	1.8	0.0015	0.05	2.7	0.56	0.028	0.43	
	Filt		33487	CDPHE		0.077	0.0014	<	0.37	0.54	<	0.37	
	Unfilt	117136.8	33488	CDPHE	6.86	1.1	0.0012	0.037	2	0.43	0.025	0.35	
	Filt		33488	CDPHE		0.11	0.0011	0.006	0.46	0.42	<	0.31	
	Unfilt	120727.2	33490	CDPHE	6.42	0.79	0.0011	0.02	1.2	0.29	0.005	0.27	
	Filt		33490	CDPHE		<	0.0011	<	0.48	0.29	<	0.26	
	Unfilt	118034.4	33491	CDPHE	6.35	1	0.0012	0.026	1.5	0.36	0.011	0.31	
	Filt		33491	CDPHE		0.07	0.001	<	0.25	0.34	<	0.27	
	Unfilt	383275.2	33778	CDPHE	7.4	<	0.0016	0.008	0.078		<	0.24	
	Filt		33778	CDPHE		<		0.007	0.042	0.35	<	0.24	
	Unfilt	392251.2	33779	CDPHE	7.2		0.0017	0.035	0.95		0.012	0.32	
	Filt		33779	CDPHE		<		0.006			<	0.29	
	Unfilt	357693.6	33780	CDPHE	7.2								
	Filt		33780	CDPHE		<		0.006		0.36	<	0.26	
	Unfilt	35804	33891	CDPHE	6.3						0.0055		
	Filt		33891	CDPHE		<	0.0015	0.006		0.88	<	0.46	
	Unfilt	35006.4	33892	CDPHE	6.8		0.0013	0.026	3		0.0063	0.54	
	Filt		33892	CDPHE		0.052	0.0012	0.005	1.7	0.94	<	0.51	
	Unfilt	194779.2	34170	CDPHE	7.4		0.00097	0.019	0.75	0.33	<	0.3	
	Filt		34170	CDPHE		<	0.00099	0.006	0.19		<	0.29	
	Unfilt	194779.2	34171	CDPHE	6.73		0.00097	0.019	0.74		<	0.28	
	Filt		34171	CDPHE		<	0.00096	0.005	0.24		<	0.26	
LFK01	Unfilt		34920	CDPHE	2.87	9.5	0.047	1.3	95	2	0.78	9.8	North (Longfellow) adit.
	Filt		34920	CDPHE		9.2	0.047	1.3	89	2	0.68	9.5	
	Unfilt	2.244	34977	CDPHE	3.48	13	0.058	2	120	3.3	1	14	
	Filt		34977	CDPHE		12	0.055	1.9	110	3	0.86	12	
M2a/LFK01	Filt	143.616	34171	CDPHE	3.35	5.7	0.035	1.2	57		0.3	7.2	
PorA/LFK01	Filt	1.15	34554	SGC	2.5	13.2	0.47	1.7	158	2.7	1.5	20	
K-BG	Filt		34557	SGC	6.88	12	0.05	1	1.91	16	0.06	28.6	Pond in wetland area above South (Koehler) dump and across road to US Basin
LFK03	Unfilt	2.6928	34920	CDPHE	2.36	52	0.54	65	480	14	0.086	160	Flow from pool on south side of
	Filt		34920	CDPHE		52	0.54	64	480	14	0.086	160	South (Koehler) dump. Stream may be
	Unfilt	4.488	34977	CDPHE	2.7	39	0.41	50	330	14	0.04	120	partially from U S Basin.
	Filt		34977	CDPHE		31	0.31	40	250	12	0.029	94	
M2c/LFK03	Filt	2.244	34171	CDPHE	3.01	20	0.25	23	160		0.17	74	
LFK04	Unfilt	0.4488	34920	CDPHE	2.29	57	0.47	51	450	15	0.07	130	Seep from west side of South (Koehler)
	Filt		34920	CDPHE		56	0.46	51	440	15	0.075	130	dump.

***SITE* CHARACTERIZATION DATA SUMMARY**

SITE: KOEHLER/LONGFELLOW

M2b/LFK04	Filt	3.1416	34171	CDPHE	2.77	47	0.62	63	520		0.17	180	
K-Port	Filt		34554	SGC	1.81	85	0.66	109	934	29.7	0.53	290	South (Koehler) adit pool
LFK06	Unfilt	0.4488	34920	CDPHE	2.35	54	0.61	0.71	540	15	0.14	180	Flow on the NE side of South (Koehler)
	Filt		34920	CDPHE		54	0.61	0.71	540	14	0.12	180	dump. Suspected adit flow.
KD-2/LFK0(	Filt	2	34554	SGC	2.19	88	0.45	104.1	804	26.5	0.19	262	
LFK08	Unfilt	1.3464	34920	CDPHE	3.08	2.5	0.009	0.6	13	1.8	0.69	1.6	Combined stream above North
	Filt		34920	CDPHE		2.4	0.01	0.6	12	1.8	0.69	1.6	(Longfellow) adit flow.
	Unfilt	3.5804	34977	CDPHE	4.3	1.8	0.008	0.49	7.4	0.58	0.45	1.7	
	Filt		34977	CDPHE		1.7	0.007	0.5	5.2	0.58	0.4	1.6	
LFK09	Unfilt	9.4248	34920	CDPHE	2.51	31	0.24	27	230	9.1	0.35	72	Discharge from pond between
	Filt		34920	CDPHE		32	0.26	28	230	9.3	0.33	76	North (Longfellow) and South
	Unfilt	8.976	34977	CDPHE	2.98	57	0.56	68	480	18	0.11	170	(Koehler) dumps.
	Filt		34977	CDPHE		56	0.52	67	470	18	0.088	160	
KP-1/LFK0(	Filt	6.6	34554	SGC	2.34	76	0.49	61.3	461	24.7	0.3	172	
LFK10	Filt	9.4248	34920	CDPHE	2.44	51	0.44	52	420	14	0.069	130	
KD-1/LFK1(	Filt	2.93	34554	SGC	2.31	58.7	0.17	56.5	339	25.1	0.19	150	
LFK11	Unfilt	1.3464	34920	CDPHE	2.13	58	0.64	78	610	16	0.23	190	South (Koehler) adit.
	Filt		34920	CDPHE		58	0.64	77	610	16	0.23	190	
	Unfilt	0.71808	34977	CDPHE	2.56	93	1.1	140	990	26	0.29	330	
	Filt		34977	CDPHE		95	0.97	140	990	26	0.29	320	

Mine Remediation Plan: London Mine Portals

Remediating Party: Sunnyside Gold Corporation
P.O. Box 177
Silverton, CO 81433

contact William B. Goodhard
Resident Manager

1. Description of Mining Activities

Physical Description of Conditions

There are up to five portals in the area, three which appear to discharge continously and two discharge during high runoff, two waste dumps and a shaft. Water flowing from these areas is low in pH and appears to carry dissolved metals. The dumps are exposed to rainwater and snowmelt as well. The regional geology is volcanic rocks with narrow veins containing base metals; Fe, Pb, Cu and Zn. Sampling of the waters in this area indicates that even though the portal discharges are small, there is a substantial increase in dissolved metal loading to Burrows Creek.

General Description of the Mining Site

The history, including dates of operation, of this property is not known by Sunnyside Gold Corporation. However it is easy to see that this property is very old as evidenced by the condition of the property. This surface disturbance is approximately 0.5 acres.

Identification of Lands

The London mine is located in Burrows Gulch to the North of Houghton Mountain,San Juan County, Colorado. See attached location and site map.

Identification of the Waters of the United States Potentially Affected

Burrows Creek is above the confluence with the North Fork of the Animas River. See attached location map.

2. Site Map

Attached

3. Stormwater Management Controls

Prior to any work taking place on the property, Sunnyside will install sediment catchment traps to minimize impacts from sediments entering the waters of the State.

4. Inspection and Record Keeping

The Manager or a member of the Technical Services Department will inspect this property on a regular basis while the work is being done and periodically until the permit is released. Quarterly reports with photographs will be submitted to both the Water Quality Control Division and The Colorado Division of Minerals and Geology. Photographs of the property prior to remediation will be submitted with the first quarterly report.

Monitoring

Monitoring points will be upstream and downstream at this project site as well as flows from the adits and dumps. Stream sampling for this project will occur in Burrows Creek. Monitoring will start prior to remediation work and continue until two years after the project is completed. Monitoring will occur four times yearly with one at high flow and

two at low flow and will be submitted by the 28th day of the month following receipt of analysis as well as with the quarterly reports. All samples taken will be analyzed for dissolved metals Zn, Fe, Al, Mn, Cd, and Cu, total sulfate, hardness, a field pH as well as flow measurements.

Reporting

Should this project become necessary to maintain water quality in the Upper Animas, SGC will notify WQCD prior to work starting. Prior to installation of hydraulic seals in the adits, SGC will submit seal designs to WQCD. SGC will submit quarterly reports for this project. Once all reclamation activities are complete, a final report will be submitted. Reports will be sent to the Division of Minerals and Geology as well as the Water Quality Control Division. The report will include activities to date as well as planned activities for future work.

5. Mine Remediation Plan

Legal Right to Enter and Conduct Activities

SGC has not contacted the property owner. No contact will be initiated until substantial agreement is reached with WQCD concerning remediation projects. No work will commence until proper permission is granted.

Remedial Goals and Objectives

Reduction of low pH, metal laden waters flowing into the West Fork of the Animas River at Animas Forks by:

1) reduction of acidity in the headwaters through limiting the quantity of waters reacting with pyrite and other sulfide minerals.
2) reduction of exposure to waste material by snowmelt and rainwater.
3) visually reclaim area while preserving historic aspects.

Site Loading Estimate

For all of the remediation projects, and based on limited information, the site loading estimate for each project site was based on the following methodology:

Adits-

Using available data, zinc loading was calculated based on the average flow and average zinc values.

Mine Waste Dumps and Tailings Piles-

Site composite soil samples were tested using a water bath extraction. This test consists of exposing a 1:1 ratio by weight of material to deionized water. The mixture is briefly mixed then allowed to set for 30 minutes. The sample was then filtered (0.45 micron) and analyzed for metals.

Annualized loading was calculated using rainfall data (proportionally adjusted for site elevation between the Silverton and Red Mountain weather stations), exposed area of waste dump or tailings site and loading based on 1:1 water bath test results. For comparison to adit flow loadings projects, the annualized loading was converted to an average daily loading.

Based on these assumptions and procedures, SGC estimates that the average daily loading for this site may be as much as 12.2 pounds of dissolved zinc per day. SGC is under no obligation to defend these estimates and they should only be used as an estimate. SGC does not represent that its mitigation project at this site will remove any specific percentage of metals loading from this site: the loading estimate contained herein does not form the basis of an enforceable permit obligation.

Description of Project

The waste dumps will be isolated from portal flows as well as stormwater events. The dumps will be regraded and hydrologic diversions installed to prevent run on conditions. The dumps would then be stabilized with basic pH material and revegetated to minimize percolation from stormwater events.

The portals will be opened and studied for the placement of hydraulic seals. In order for hydraulic seals to be placed, SGC feels that sites meeting the following conditions need to be found.

1)Location far enough underground to avoid the near surface fractures and joints caused by weathering.

2)Adequate rock compressive strength for structural stability.

3)A length of the tunnel with minimal faulting or other geologic features that may serve as a leakage pathway.

4)Adequate ground cover over the potential site to resist the hydrostatic forces from the potential maximum head.

If an acceptable location can be found, SGC will design and install two hydraulic seals. After sealing is complete, the seal will be contact grouted and the diversion pipes, if necessary for construction, grouted. The near surface fracture flows typically found will be diverted to avoid contact with waste material and the portal closed. Design of hydraulic seals will be according to current engineering practices. The design approach will be similar to the attached paper on Tunnel Bulkheads.
This plan is also subject to notification requirements for disturbance of Historical Mining Sites to the board of the San Juan County Commissioners.

Work Plan

1) Build catchments for potential adit releases.
2) Open and evaluate adits for hydraulic seals.
3) Design and install hydraulic seals.
4) Grout seals and bypass pipes.
5) Portal closure.
6) Surface diversions and dump regrading.
7) Addition of pH neutralizing material, seeding and mulching.

Analysis

Diversion and isolation of the mine dumps (including pH stabilization) will isolate this material from direct contact with run on and intermittent flows and minimize infiltration from stormwater events. This will improve water quality of the Burrows Creek above Animas Forks.

The hydraulic seals proposed for the London Mine Adits will reduce the unsaturated zone by removing the drain. This will result in minimizing the oxygen available for reaction with the sulfide materials in the area. The hydrological conditions will be restored to an approximation of pre mining conditions.

Contingency Plans

Should the concept of hydraulic seals not be practical after engineering studies, SGC will consult with the Division of Minerals and Geology and WQCD for other mine drainage mitigation alternatives. If an acceptable system can be arrived at, SGC will install such a system.

Catchments will be provided in order to prevent impact to Burrows Creek during excavation prior to opening portals.

Monitoring

Monitoring points will be upstream and downstream at this project site as well as flows from the adits and dumps. Stream sampling for this project will occur in Burrows Creek. Monitoring will start prior to remediation work and continue until two years after the project is completed. Monitoring will occur four times yearly with one at high flow and two at low flow and will be submitted by the 28th day of the month following receipt of analysis as well as with the quarterly reports. All samples taken will be analyzed for dissolved metals Zn, Fe, Al, Mn, Cd, and Cu, total sulfate, hardness, a field pH as well as flow measurements.

Budget

SGC will fund this project.

Description of Land Use

This remediation work plan is intended to use Best Management Practices on the site to conform with surrounding land use policies for:

1) Land stabilization, limited rangeland and wildlife habitat to approximately resemble a mountain park ecosystem consistent with bordering undisturbed areas.

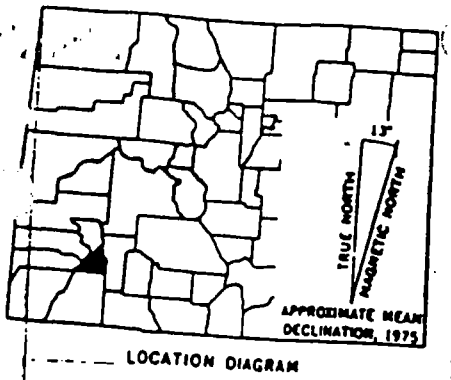
2) The conversion of facilities, usable for purposes other than for mining, to alternate uses and preserve facilities of historic interest.

Attachment Available From WQCD Upon Request

"Tunnel Bulkheads for Acid Mine Drainage", Einarson and Abel, Proc Int'l Symp on Unique Underground Structures, 1990

6. Consistency with Other Plans

There are no other remediation plans for this property.

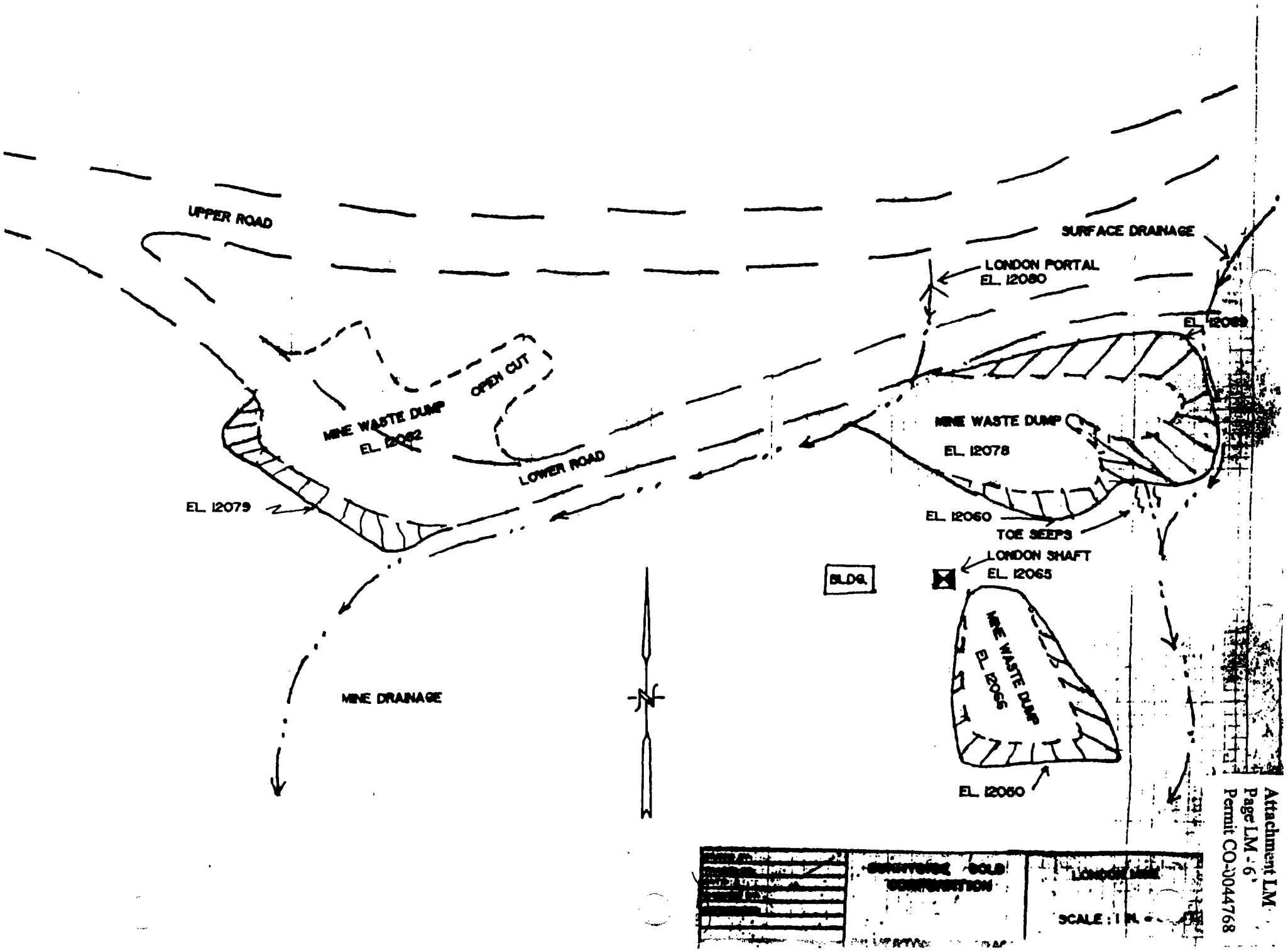


LOCATION DIAGRAM

SUNNYSIDE GOLD CORP.
SAN JUAN COUNTY, CO.

LONDON MINE PORTALS

SCALE 1:50 000



Attachment LM
Page LM - 6
Permit CO-0044768

SITE CHARACTERIZATION DATA SUMMARY

SITE: LONDON MINE

SITE CHARACTERIZATION DATA SUMMARY

SITE: LONDON MINE

MEDIA: WATER

Sample	Filt./Unfilt.	Flow GPM	Sample Date	DATA SOURCE	pH s.u.	Al mg/l	Cd mg/l	Cu mg/l	Fe mg/l	Mn mg/l	Pb mg/l	Zn mg/l	Comments
A07LM	Unfilt		20-Jul-93	CDPHE	6.39								
	Filt					<	0.0107	0.009	0.047	1.4	<	8.70	

SITE CHARACTERIZATION DATA SUMMARY

SITE: *LONDON MINE*

RAINFALL DATA: Source Silverton Weather Station

YEAR	Rainfall inch		Snow inch	Moisture as Snow inch	Total Moisture inch
June '91-May '92	9.55		134.75	11.58	21.1
June '92-May '93	9.82		260.5	12.89	22.71
June '93-May '94	7.42		130.5	10.03	17.45

RAINFALL DATA: Source Idarado Mining Company--Red Mountain Weather Station

YEAR	Rainfall inch		Snow inch	Moisture as Snow inch	Total Moisture inch
June '91-May '92	8.0		444.5	35.6	43.6
June '92-May '93	8.8		545.5	49.9	58.7
June '93-May '94	7.1		330.5	26.1	33.2

Mine Remediation Plan: Pride of the West Tailings

Remediating Party: Sunnyside Gold Corporation
P.O. Box 177
Silverton, CO 81433

contact: William B. Goodhard
Resident Manager

1. Description of Mining Activities

Physical Description of Conditions

An old tailings pond, pre Reclamation Act, is exposed to rainwater, stormwater and groundwater springs under and near the tailings. Exposure of these materials to water should be controlled. There is a total measured estimate of 64,000 cubic yards.

General Description of the Mining Site

The historic, pre reclamation law, tailings are located at Howardsville, San Juan County, Colorado. The site is accessed by taking Colorado Highway 110 north of Silverton. The tailings were placed here in the late 1950's and 1960's.
The total disturbed area is approximately 3.9 acres.

Identification of Lands

Historic pre Reclamation Act tailings at the old townsite of Howardsville, San Juan County Colorado. See attached location and site maps.

Identification of the Waters of the United States Potentially Affected

Cunningham Creek and Animas River at and above confluence. See attached site map.

2. Site Map

Attached

3. Stormwater Management Controls

Sediments traps will be created as needed below the project to prevent tailings from being washed into the Animas River or Cunningham Creek. The traps will be cleaned and removed when no longer necessary for the project.

4. Inspection and Record Keeping Procedures

The Manager or a member of the Technical Service Department will inspect this property on a regular basis while the work is being done and periodically until the permit is released. Quarterly reports with photographs will be submitted to both the Water Quality Control Division and the Colorado Division of Minerals and Geology. Photographs of the property prior to remediation will be submitted with the first quarterly report.

5. Mine Remediation Plan

Legal Right to Enter and Conduct Activities

SGC has not contacted the property owner concerning this project. No contact will be initiated until substantial agreement on remediation projects is reached with WQCD. No work will commence until proper permission is granted.

Remedial Goals and Objectives

Cleanup of historic tailings, removal from contact with flowing water, severing existing direct connections to the river in order to reduce the impacts to the Animas River from dissolved metals.

Site Loading Estimate

For all of the remediation projects, and based on limited information, the site loading estimate for each project site was based on the following methodology:

Adits-

Using available data, zinc loading was calculated based on the average flow and average zinc values.

Mine Waste Dumps and Tailings Piles-

Site composite soil samples were tested using a water bath extraction. This test consists of exposing a 1:1 ratio by weight of material to deionized water. The mixture is briefly mixed then allowed to set for 30 minutes. The sample was then filtered (0.45 micron) and analyzed for metals.

Annualized loading was calculated using rainfall data (proportionally adjusted for site elevation between the Silverton and Red Mountain weather stations), exposed area of waste dump or tailings site and loading based on 1:1 water bath test results. For comparison to adit flow loadings projects, the annualized loading was converted to an average daily loading.

Based on these assumptions and procedures, SGC estimates that the average daily loading for this site may be as much as 43.0 pounds of dissolved zinc per day. SGC is under no obligation to defend these estimates and they should only be used as an estimate. SGC does not represent that its mitigation project at this site will remove any specific percentage of metals loading from this site: the loading estimate contained herein does not form the basis of an enforceable permit obligation.

Description of Project

Sunnyside Gold Corporation (SGC) will provide sediment catchments below the tailings to minimize sediment transport to the river during excavation. The tailings would be removed from contact with flowing water and stormwater and placed in the Mined Land Reclamation permitted tailings pond on the property. The excavated area would then be revegetated. No additional reclamation work will be done on the permitted facility. The catchment traps will be removed, the site regraded, soil amendments added, seeded and mulched.

Work Plan

1) Build catchments.
2) Relocate tailings.
3) Remove catchments and regrade area.
4) Add soil amendments as needed, seed and mulch.

Analysis

Removal and consolidation of these tailings will remove the materials from exposure to groundwater seeps and severe the direct connection to the Animas River. This will prevent direct contact with flowing water and reduce the risk for impact to the Animas River and Cunningham Creek.

Monitoring

Due to the close proximity and high flow conditions which occur in the Animas River, no monitoring is contemplated for this project. In Lieu of monitoring at this location, the tributary mouth will be sampled on a rotating basis with the U. S. Bureau of Reclamation. Monitoring reports will be submitted the month after the analysis is received as well as with the quarterly reports and sent to both the Water Quality Control Division and the Division of Minerals and Geology.

Budget

SGC will fund this program unless the property owner chooses to contribute.

Description of Land Use

This remediation work plan is intended to use Best Management Practices on the site to conform with surrounding land use policies for:

1) Land stabilization, limited rangeland, and limited wildlife habitat to approximately resemble a mountain park ecosystem consistent with bordering undisturbed areas.

2) The conversion of facilities, usable for purposes other than mining, to alternate uses and preserve facilities of historic interest.

Contingency Plans

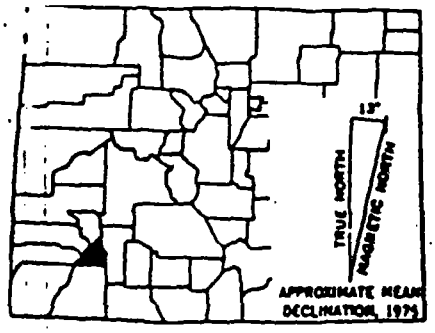
Construct catchments to prevent sediments from reaching the Animas River during excavation.

Should the owner not allow the tailings to be placed on the property: the tailings would then be relocated, mixed with high pH material for stabilization and placed in Tailings Pond #4 at the Mayflower Mill. Under SGC's MLR Permit (M-77-378), this material can be consolidated at Tailings Pond #4.

6. Consistency with Other Plans

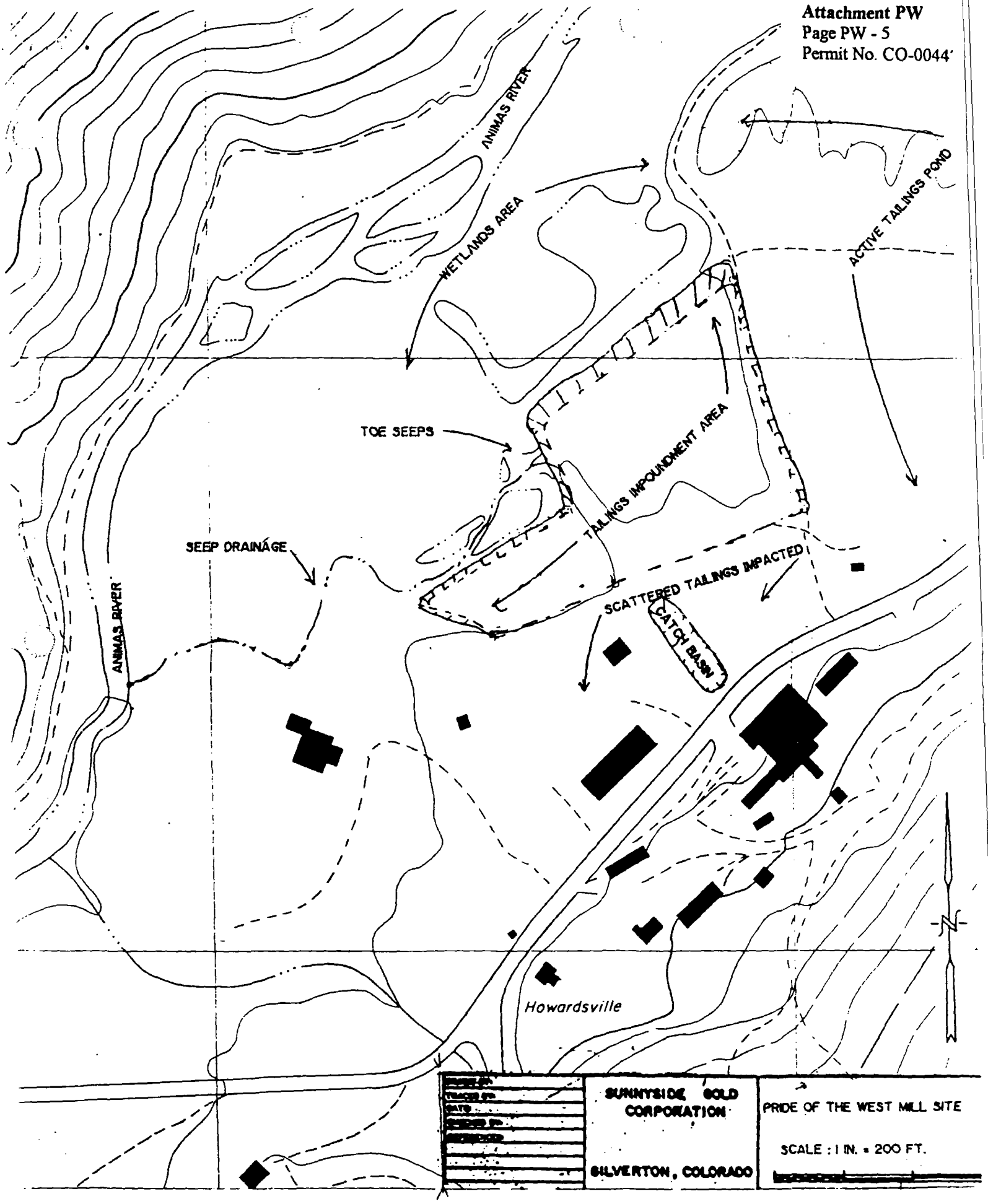
This remediation plan is consistent with what the Division of Minerals and Geology wants on this property. At this time the owner has not submitted any revisions to their permit for this remediation.

Should the material be trucked to SGC's Tailings Pond #4, it may require a Technical Revision to the site MLR permit by the owner of these tailings. Removal to SGC's Tailings Pond is consistent with the MLR Permit M-77-378 for that facility.



LOCATION DIAGRAM

SUNNYSIDE GOLD CORP.
SAN JUAN COUNTY, CO.


ANIMAS RIVER
WETLANDS AREA
ACTIVE TAILINGS POND
TOE SEEPS
TAILINGS IMPOUNDMENT AREA
SEEP DRAINAGE
ANIMAS RIVER
SCATTERED TAILINGS IMPACTED
CATCH BASIN
Howardsville
SUNNYSIDE GOLD CORPORATION
SILVERTON, COLORADO
PRIDE OF THE WEST MILL SITE
SCALE : 1 IN. = 200 FT.

SITE CHARACTERIZATION DATA SUMMARY

SITE: PRIDE

SITE CHARACTERIZATION DATA SUMMARY

SITE: PRIDE

MEDIA: SOILS

Analysis Method	Sample Description	Sample Date	DATA SOURCE	pH s.u.	Al ppm	Cd ppm	Cu ppm	Fe ppm	Mn ppm	Pb ppm	Zn ppm	COMMENTS
1:1 Water Bath	Tailings-Old Pond		SGC		29.6	8.21	11.7	11.3	191	3.6	610	
Modified 1312 TCLP	Tailings-Old Pond		SGC		3.2	0.529	1.3	1.24	15.6	4.2	46.5	
Total Metal Conc.	Tailings-Old Pond		SGC	3.7	11800	45	545	15900	1480	7600	10400	

SITE CHARACTERIZATION DATA SUMMARY

SITE: *PRIDE*

MEDIA: WATER

Sample	Filt./Unfilt.	Flow GPM	Sample Date	DATA SOURCE	pH s.u.	Al mg/l	Cd mg/l	Cu mg/l	Fe mg/l	Mn mg/l	Pb mg/l	Zn mg/l	Comments
A45	Unfilt	48380.64	34170	CDPHE	6.99								Animas above site
	Filt		20-Jul-93	CDPHE		0.06	0.00116	0.007	<		<	0.45	
A46	Unfilt	57	09-Sep-91	CDPHE	5.85	0.91	0.013	0.028	14	17	0.058	8.30	Drainage from old tailings
	Filt		09-Sep-91	CDPHE		0.89	0.013	0.023	14	16	0.013	8.20	
	Unfilt	480	25-Jun-92	CDPHE	6.05								
	Filt		25-Jun-92	CDPHE		0.41	0.0082	0.021		5.4	0.02	3.10	
	Unfilt	15	15-Oct-92	CDPHE	5.55								
	Filt		15-Oct-92	CDPHE		0.97	0.017	0.023			0.022	12.00	
	Unfilt	125	20-Jul-93	CDPHE	5.1		0.0167	0.061	20		0.09	10.00	
	Filt		20-Jul-93	CDPHE		1.10	0.0174	0.051	18		0.012	10.00	
A46a	Unfilt	45656	20-Jul-93	CDPHE	5.6	0.09	0.00135	0.009	0.097		<	0.45	Animas below site
	Filt		20-Jul-93	CDPHE		<	0.00133	0.009	0.058	0.28	<	0.44	

Attachment PW
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Permit No. CO-0044768

SITE CHARACTERIZATION DATA SUMMARY

SITE: **PRIDE**

RAINFALL DATA: Source Silverton Weather Station

YEAR	Rainfall inch		Snow inch	Moisture as Snow inch	Total Moisture inch
June '91-May '92	9.55		134.75	11.58	21.1
June '92-May '93	9.82		260.5	12.89	22.71
June '93-May '94	7.42		130.5	10.03	17.45

RAINFALL DATA: *Source Idarado Mining Company–Red Mountain Weather Station*

YEAR	Rainfall inch		Snow inch	Moisture as Snow inch	Total Moisture inch
June '91-May '92	8		444.5	35.56	43.56
June '92-May '93	8.8		545.5	49.89	58.69
June '93-May '94	7.1		330.5	26.12	33.22

Attachment PW-1
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Permit No. CO-0044768

Mine Remediation Plan — Sunnyside Mine Pool Mitigation

Remediating Party: — Sunnyside Gold Corporation
P.O. Box 177
Silverton, CO 81433

contact — William B. Goodhard
Resident Manager

1. Description of Mining Activities

Physical Description of Conditions

Mining at the Sunnyside first started in the late 1880's and continued under various operators. Sunnyside Gold Corporation acquired the property in 1985 and operated until August of 1991 when closure of the mining operations initiatedd final reclamation. The Sunnyside Mine produced precious and base metal ores. Sunnyside Gold Corporation (SGC) is in the process of final reclamation at Sunnyside. As part of the final reclamation, SGC has proposed and the Colorado Mined Land Reclamation Board (MLRB) has approved (Nov 1993), the installation of hydraulic seals within the mine workings in order to return the hydrologic regime to an approximation of premining conditions. The seals are to be used to minimize flow through old workings while forcing a majority of the water around the mine workings. As the mine pool fills with oxygenated water, the mountain will be resaturated and historic flow paths will resume. After the oxygenated water reacts with sulfide mineralization, the mine pool will be devoid of oxygen and the pool will equilibrate at a near neutral pH.

General Description of the Mining Site

The Sunnyside Mine surface access is Northeast of Silverton, San Juan County , Colorado. The Terry Tunnel surface facility and Sunnyside Basin is accessed by taking State Highway 110 North out of Silverton to the historic Townsite of Eureka then up Eureka Gulch. See Attached Site Map

Identification of Lands

Underground workings of Sunnyside Mine located in San Juan County, Colorado. Workings lie under Sunnyside Basin with access tunnels from Eureka Creek, Terry Tunnel and the old townsite of Gladstone in Cement Creek, American Tunnel. See attached location map.

Latitude 37 degrees 54 minutes Longitude 107 degrees 37 minutes

Identification of the Waters of the United States Potentially Affected

Headwaters of Eureka Creek and Cement Creek. Both flow into the Animas River at or upstream of Silverton, Colorado. See attached map.

2. Site Map

Attached

3. Stormwater Management Controls

At the Terry Tunnel the existing settling ponds will be used for catchments to prevent potential spillage at the injection site from entering the surface waters which flow past the Terry Tunnel. If the project is relocated to Sunnyside Basin then catchments will be installed in order to prevent potential spillage at the injection site from entering the surface waters which flow out of Sunnyside Basin. The surface area to be used at the Terry Tunnel is covered by the following permits: MLR Permit # M-77-378, CDPS Discharge Permit # CO-0036056 and CDPS Stormwater Permit # COR-040058.

Monitoring

There is no access to the mine pool except through the hydraulic seals located in the Terry Tunnel and American Tunnel. SGC will sample the quality of the pool through the American Tunnel seal annually, as described in Technical Revision #14 submitted to the Division of Minerals and Geology. The seep and spring sampling program described in SGC Technical Revision # 14 with the Division of Minerals and Geology will be continued as scheduled. Annual reports on the progress of this study are distributed to both the Division of Minerals and Geology and the Water Quality Control Division. Monitoring of seeps and springs will continue until the mine pool has reached equilibrium plus two years as defined in SGC MLR Permit Technical Revision # 14.

4. Inspection and Record Keeping Procedures

Reporting

The SGC Manager or a member of the Technical Service Department will inspect the facility. Due to the seasonal access minimizing work time on this project, SGC will submit quarterly progress reports. Reporting for this project will include amount of alkaline material injected, water injected and effects on pool height. Once injection is completed, a final report will be submitted. Reports will be sent to both the Colorado Division of Minerals and Geology and the Water Quality Control Division.

5. Mine Remediation Plan

Legal Right to Enter and Conduct Activities

All access necessary for this project is controlled by SGC and within The Mined Land Reclamation Permit area.

Photographs

Photographs documenting the condition of the project site before any remedial action has occurred will be submitted with the first regular report. Photographs of work in progress will be submitted with reporting as necessary to show remedial progress.

Description of Remedial Action

Remedial Goals and Objectives

1) Speed physical equilibrium of mine pool.
2) Speed chemical equilibrium of mine pool.
3) Reduce first flush impact, if any, from waters that may emanate from Sunnyside workings or from historic flow paths as they are reestablished when waters now entering the Sunnyside Mine begin once again to migrate through the area.
4) Mantain high pH water in pool in order to facilitate rapid drawdown, if necessary.

A basic pH of 9.0 to 10.0 within the mine pool is planned to counteract initial effects of mine pool water quality as it consumes its supply of oxygen and speeds the reactions necessary for chemical equilibrium.

Description of Project

The purpose of this project will address the following:

1) Force the mine pool to physical equilibrium at an accelerated rate.
2) Force the mine pool towards chemical equilibrium from a basic pH and avoid acid conditions.
3) Speed up the chemical equilibrium process by minimizing the initial oxygen dependent reaction with metal sulfides.
4) Provide alkaline solution to counteract the initial lowering of pH in the pool as oxygen is consumed.

The procedure for the project is to pump alkaline waters, using either caustic soda or hydrated lime to supply alkalinity, into and through the hydraulic seal at the Terry Tunnel. Should the pool elevation raise higher than expected then the project will be moved to Sunnyside Basin and the alkaline injection will be pumped through an old ventilation raise above the 2200 ore pass. The mixture will flow into the ore pass and mix with waters that flow towards the Terry Tunnel and be diverted to the 2200 ore pass. The 2200 ore pass is connected to six different levels of the mine and is the major conduit for water to spread into the workings. See attached drawing.

The schedule for pumping of alkaline waters is limited due to avalanche conditions in the winter at the Terry Tunnel (11,500' elevation) and the short summer runoff period in Sunnyside Basin, typically July and August, and because of limited access to the 12,000' plus site (elevation). At The Terry Tunnel the extended injection time will typically be from June until November. The pumping rate will be set between 600 and 1200 gallons per minute due to stream flows, will allow for 129 million plus gallons to be added per season. At Sunnyside Basin during high flow conditions approximately 12 million plus gallons of water can be added to the pool per season.

Pumping could continue until physical equilibrium is established. Annual evaluation will determine if continuation after the initial year is warranted. It will take an estimated 195 million gallons to reach expected equilibrium. Based on water treatment experience, to raise the pH from 6.5 to 9.5 will require the addition of at least 200 tons of lime for quality of water at expected equilibrium. SGC would add additional lime or caustic soda to counteract acidity generated by the pool consuming its supply of oxygen.

The project will target a pH of approximately 9.0 to 10.0 in the pool. The injection pH will be periodically adjusted based on bench scale testing to achieve a target injection pH level of 12.0.

Work Plan

1) Once the Terry Tunnel is accessible a pipe line will be strung from McCarty Creek and combined with an injection pipe to the Terry Tunnel hydraulic seal at which a one way valve will be installed. The line will be used to pump water and pH adjusting fluids through the Terry Tunnel hydraulic seal and into the orepass.

2) Pumping will be ongoing as long as there is water available and access to the Terry Tunnel is safe. The injection would be ongoing until it appears that the mine pool is reaching physical equilibrium.

3) Once the mine pool reaches equilibrium the piping will be disassembled.

4) Reclamation of the area is addressed as part of SGC's MLR Permit (M-77-378).

Analysis

Pumping of high pH waters with buffering capability will enhance the following aspects of the hydraulic seal project.

1) Will speed the process of achieving physical equilibrium and allow the physical system to be evaluated over a shorter time period than would occur naturally.

2) Will speed the process of achieving chemical equilibrium by offsetting the production of acidity while pool is deoxygenating.
3) Any underground waters that move through the mine and eventually report to the surface as seeps and springs will be of higher pH and have alkalinity to neutralize acid salts that may be present in the mine or historic geologic faults.
4) Should future drawdown of the mine pool become necessary, drawdown could be accomplished more rapidly because pool water would be of higher pH and better quality.

As the entire system moves to equilibrium, the addition of high pH waters will force physical and chemical equilibrium faster and result in lower initial concentrations of dissolved heavy metals in the pool.

Budget

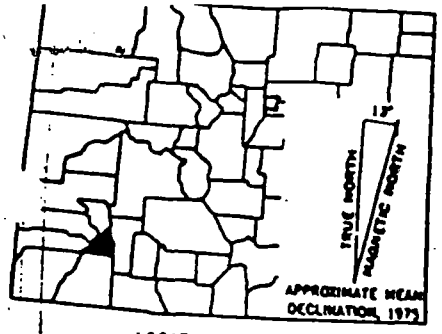
SGC will fund this program

Attachments Available From The WQCD Upon Request

Report on Injection

6. Consistency with Other Plans

This mine remediation plan will use the surface facility at the Terry Tunnel which is covered by the following permits: MLR Permit M-77-378, CDPS Discharge Permit # CO - 0036056 and CDPS Stormwater Permit # COR-040058.

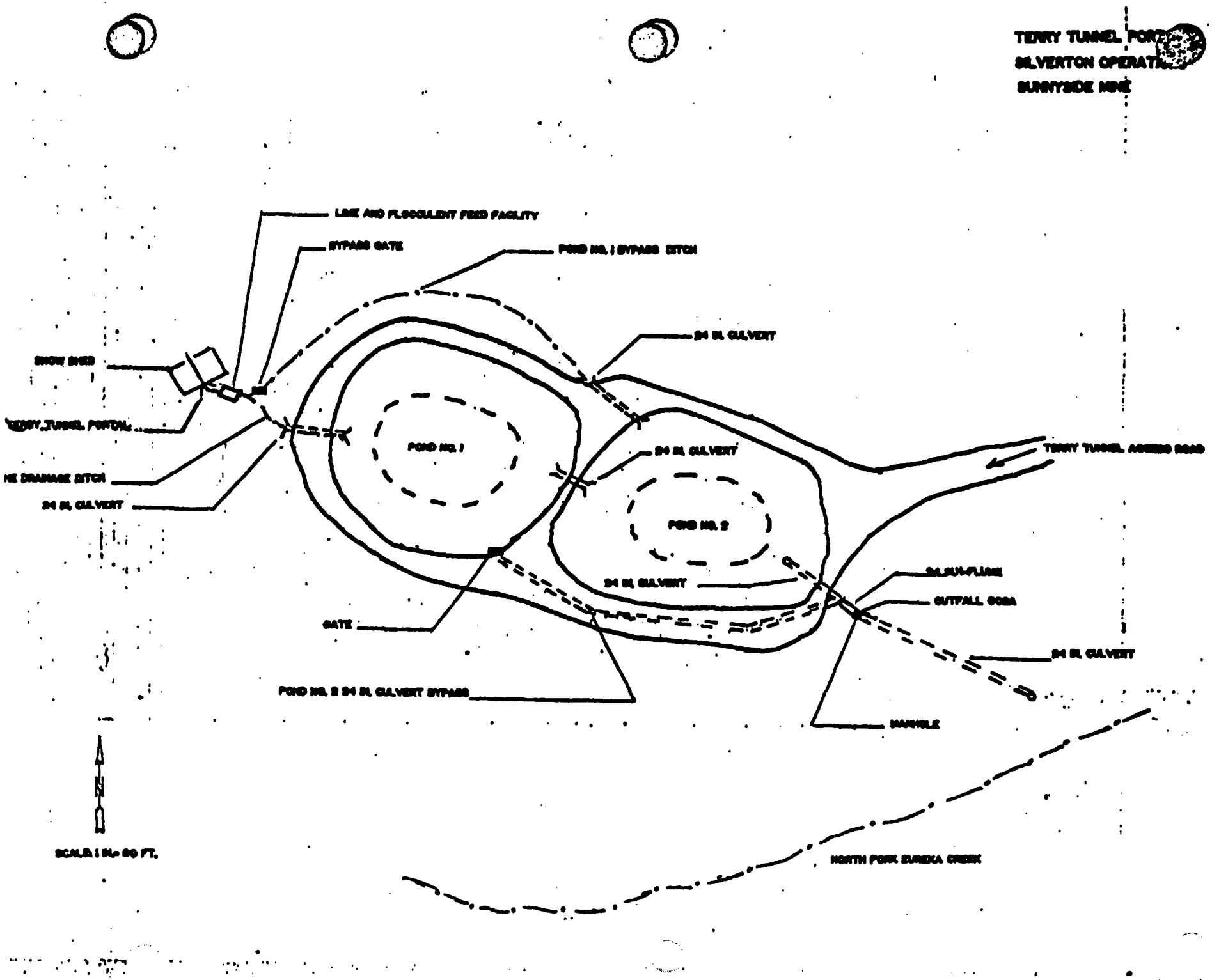


LOCATION DIAGRAM

SUNNYSIDE GOLD CORP.
SAN JUAN COUNTY, CO.

SUNNYSIDE MINE POOL MITIGATION

SCALE 1:50 000



Attachment SP
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Permit No. CO-0044

APPENDIX D
CDPS RENEWAL #CO-0027529
American Tunnel

COLORADO DISCHARGE PERMIT SYSTEM (CDPS)

SUMMARY OF RATIONALE

SUNNYSIDE GOLD CORPORATION
AMERICAN TUNNEL
CDPS PERMIT NUMBER CO-0027529, SAN JUAN COUNTY

TABLE OF CONTENTS

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VII. CHANGES MADE AFTER PUBLIC NOTICE 7

I. TYPE OF PERMIT

Fourth Renewal

II. FACILITY INFORMATION

A. *Facility Type:* *Hardrock Mining - Mine Dewatering*
Fee Category: *Category 03, Subcategory 3*
Category Flow Range: *1.0 MGD or greater*
Annual Fee: *$1,519*

B. *SIC Code:* *1041*

C. *Legal Contacts:*

William Goodhard, Manager
Sunnyside Gold Corporation
P.O. Box 177
Silverton, CO 81433
(303) 387-5533

D. *Facility Contact:*

Larry Perino, Superintendent, Technical Services
Sunnyside Gold Corporation
P.O. Box 177
Silverton, CO 81433
(303) 387-5533

E. *Facility Location:* *T42N, R7W, NE1/4 S21, approx. 200 ft. south of the endpost of the west fork of Colorado Hwy 110 starting at Silverton, CO.*

F. *Discharge Point:* *004A, the outfall from the fourth treatment pond, which consists of flow from the American Tunnel, and possibly a portion of the receiving stream which may be diverted into the treatment plant, following treatment and prior to discharge to Cement Creek.*

004X, which is physically the same as outfall as 004A, but which will be used to report chronic Whole Effluent Toxicity testing results. This discharge point will only be used until treatment of Cement Creek (explained later in rationale) is begun. After that time, the permittee may report "no discharge" on the appropriate DMR, and request to have this outfall inactivated.

III. RECEIVING STREAM

A. Identification, Classification and Standards

1. *Identification: Discharges to Cement Creek, Segment 7 of the Animas and Florida Sub-basin of the San Juan River Basin.*

2. *Classification: This stream segment is designated as Use Protected and is classified for the following uses: Recreation, Class 2; Agriculture*

3. *Numeric Standards: The standards which have been assigned in accordance with the above classifications can be found in 3.4.0., Classifications and Numeric Standards for the San Juan River Basin (5 CCR 1002-8), which became effective March 30, 1995. The organic standards which apply to this receiving stream are listed in 3.1.0 Basic Standards and Methodologies for Surface Water (5 CCR 1002-8), effective March 2, 1995. The following numeric standards which have been assigned in accordance with the above classifications will be used to develop effluent limitations.*

 Physical and Biological Standards

 pH = 3.7 - 9.0 s.u.
 Fecal Coliforms = 200/100 ml

 Metals

 The Classifications and Numeric Standards for the San Juan River Basin contain the following narrative standards for metals: "Effective until March 2, 1998, all metals standards have been set equal to existing ambient quality. Effective as of March 2, 1998, as a result of further Water Quality Control Commission actions, metals standards will be equal to the concentrations of dissolved aluminum, cadmium, copper, iron, lead, manganese and zinc that are directed toward maintaining and achieving water quality standards in segments 3a, 4a, 4b and 9b of the Animas Basin."

B. Receiving Water Data

1. *Quality - The Division, in coordination with other entities, has extensively sampled the upper Animas Basin, including Cement Creek. In general, the results of that sampling indicate that concentrations of several metals exceed certain aquatic life criteria. A more detailed discussion is presented in 3.4.0., Classifications and Numeric Standards for the San Juan River Basin.*

2. *Quantity, Acute and Chronic Low Flows - There are no effluent limitations in this permit that are based upon mass-balance calculations, which would require the estimation of upstream low-flows for the receiving stream.*

3. *Impacts on Downstream Water Supplies or Other Receiving Waters: Provided the terms and conditions of this permit are complied with, no adverse impacts on downstream segments should occur.*

IV. FACILITY DESCRIPTION

A. Industry Description

1. *Type of Industry - The industry which has resulted in creation of the discharge is gold mining. No active mining is currently occurring or planned. The American Tunnel is in the process of being plugged, with the intention of reducing and ultimately eliminating flows.*

2. *Sources to the Treatment Plant - The discharge being treated emanates from the portal of the American Tunnel, which has historically been used to access extensive underground mine workings. The permittee has been negotiating arrangements with the State related to the plugging of this tunnel, resulting in a consent decree. Until the plugging is complete, the permittee will continue to treat any American Tunnel discharge. For an interim period of time, the permittee may also be treating a portion of the flow of the receiving stream (Cement Creek or its tributaries), which will be diverted into the treatment plant.*

3. *Chemicals Used - The chemicals used at the plant include quicklime, which is used for pH adjustment, and flocculent that is used to aid settling. The latest information available to the Division indicates that the specific flocculent being used is Nalco 7877.*

B. Wastewater Treatment Description

The treatment system consists of pH adjustment with quicklime, flocculent addition, and then settling in a series of four ponds. Pursuant to the authority of Article 9, Title 25, Regulations for the Certification of Water Treatment Plant and Wastewater Treatment Plant Operators, this facility may require a certified operator. The Operator Certification Board is within the Colorado Department of Public Health and Environment and should be contacted relative to specific requirements.

V. PERFORMANCE HISTORY

A. Monitoring Data

1. *Table V-1 summarizes the effluent data reported on the monthly Discharge Monitoring Reports (DMR's) for the American Tunnel facility from 11/93 to 10/95.*

Table V-1 -- Self-Monitoring Results

Parameter	# Samples or Reporting Periods	Reported Concentrations Avg	Min	Max	Std D	50th%	85th%	Previous Permit Limit
Flow, MGD	24	2.4	2.0	4.8	0.51	2.3	2.4	n.a.
pH, su	24		9.2	10.0				7.0-10.0
TSS, mg/l	24	10.6	5.0	19.0	3.3	11	14	20
Cadmium, mg/l	24	0.0012	0.000	0.006	0.0019	0.000	0.003	0.050
Copper, mg/l	24	0.010	0.000	0.038	0.010	0.008	0.015	0.150
Lead, mg/l	24	0.010	0.000	0.134	0.030	0.002	0.005	0.300
Zinc, mg/l	24	0.250	0.100	0.470	0.100	0.250	0.360	0.750
WET, Chronic, % Effect								
Ceriodaphnia	7		71.3	100		100	100	
Pimephales	7		25	100		100	100	

VI. TERMS AND CONDITIONS OF PERMIT

A. Determination of Effluent Limitations

1. Effluent Limitations - The following limits will apply and are discussed in Sections VI-A.2 and VI-A.3.

Table VI-1 – Effluent Limits

Effluent Parameter	*Discharge Limitations Maximum Concentrations* 30-Day Avg.	7-Day Avg.	*Daily Max.*	*Rationale*
		Limits for Point 004A		
Flow, MGD (min-max)	*N/A*	*N/A*	*Report*	*Discharge Assessment*
pH, su (min-max)	*N/A*	*N/A*	*7.0 - 10.0*	*Best Professional Judgment*
Oil and Grease, mg/l	*N/A*	*N/A*	*10*	*State Effluent Regulations*
TSS, mg/l	*20*	*30*	*N/A*	*Best Professional Judgment*
Cadmium, Total, mg/l	*0.05*	*N/A*	*0.10*	*Best Professional Judgment*
Copper, Total, mg/l	*0.15*	*N/A*	*0.30*	*Best Professional Judgment*
Lead, Total, mg/l	*0.30*	*N/A*	*0.60*	*Best Professional Judgment*
Zinc, Total, mg/l	*0.75*	*N/A*	*1.5*	*Best Professional Judgment*
TDS, mg/l	*N/A*	*N/A*	*Report*	*Salinity Regulations*
		Limits for Point 004X - Only Applicable Until Treatment of Cement Creek Has Begun		
Whole Effluent Toxicity, Chronic	*N/A*	*N/A*	*No Significant Difference*	*Discharge Permit Regulations*

3. Discussion of Effluent Limitations

a. Regulations for Effluent Limitations: The Regulations for Effluent Limitations (10.1.0), apply to the conventional pollutants. For this facility the limitation for oil and grease is based on this regulation.

b. Applicable Federal Effluent Guidelines and Standards: Since no active mining is occurring, no federal guidelines apply to this type of facility.

c. Flow Limitation: The permittee has entered into a consent agreement with the State, which specifies how the combination of American Tunnel flow and the flows Cement Creek and its tributaries will be routed through the treatment plant. The flow routing procedure may be relatively complicated and specification of a single flow limit may not be possible. Therefore, only flow reporting, without a limit, will be required.

d. Limits Based Upon Best Professional Judgment: The previous permit contained effluent limits for TSS and metals that were based upon the federal effluent regulations (BAT). And, the pH limit was based upon a BPJ adjustment to the State Effluent Regulation limit, which resulted from the Division's consideration of impacts to the receiving stream.

No active mining is currently occurring. Therefore federal BAT limitations are not directly applicable. However, as a result of the consent agreement between the permittee and the state, the permittee will operate the treatment plant in the same manner as that which was done during the term of the previous permit, and effluent concentrations will likely be similar to those discharged in the past. Therefore, the same limits for TSS, metals and pH contained in the previous permit will be implemented in this renewal permit.

e. *Antidegradation - Since the receiving water is Use Protected, an antidegradation review is not required pursuant to section 3.1.8(1)(b) of The Basic Standards and Methodologies for Surface Water.*

f. *Salinity Regulations - In compliance with the "Regulations for Implementation of the Colorado Salinity Standards Through the CDPS Permit Program", the permittee shall monitor for total dissolved solids on a quarterly basis. Samples shall be taken at the effluent discharge point(s).*

g. *Net Limits - Before the last renewal of this permit, effluent limitations were based upon net limits, allowing credits for contaminants in certain measured ground water seeps into the American Tunnel below the SGC property line. In the last renewal, net limitations were removed because the Division concluded that the ground water inflow was not being returned to the same body of water from which it came. The permittee continues to feel that net limitations are appropriate under the regulations, particularly if, in the future, waters in the American Tunnel are returned to ground water. No intake credits have been allowed in the effluent limitations for this permit renewal.*

4. *Whole Effluent Toxicity (WET) Testing*

In compliance with the previous permit, the permittee has been performing chronic WET testing. Results over the last two years have all passed the chronic WET limitations, with the dilution at which a significant difference in toxicity between the dilution and the control being greater than 100% in most cases. This indicates that the likelihood of ever having a chronic WET failure is very small.

As a result of the plugging of the American Tunnel, it is likely that the Instream Waste Concentration (IWC) would be less than what was used in the previous permit, even further reducing the possibility of a WET failure.

Another factor to consider is that, as a result of the consent agreement between the permittee and the State, the permittee will treat Cement Creek streamflow which historically has had higher pollutant concentrations than the treated effluent. When these factors are processed in a mass-balance equation, the result is a reduced pollutant loading and concentration in the Animas River, which is the first downstream waterbody classified for aquatic life use. The Division expects that an overall result of the consent agreement will be the maintenance of both the numeric and narrative standards for the Animas River.

*As a result of the above considerations, the Division has determined that neither WET limitations nor WET monitoring for this permit are required after treatment of Cement Creek is begun. Until that time, chronic WET testing and limitations will be included in the permit, based upon the same IWC that was used in the previous permit, which was **10.3%** .*

The results of the testing are to be reported on Division approved forms. The permittee will be required to conduct a statistical derivation on the data, looking for any statistically significant difference in toxicity between the control and the effluent concentrations. This set of calculations will look at the full range of toxicity (lethality, growth and reproduction). If a level of chronic toxicity occurs, such that there is a statistically significant difference in the lethality (at the 95% confidence level) between the control and any effluent concentration less than or equal to the Instream Waste Concentration (IWC), the permittee will be required to follow the automatic compliance schedule identified in Part I.B. of the permit, if the observed toxicity is due to organism lethality. Only exceedance of the limitation specified in Part I.A.will trigger the requirement for conducting the automatic compliance schedule identified in Part I.B. of the permit. If the toxicity is due to differences in the growth of the fathead minnows or the reproduction of the Ceriodaphnia, no immediate action on the part of the permittee will be required. However, this incident, along with other WET data, will be evaluated by the Division and may form the basis for reopening the permit and including additional WET limits or other requirements.

The permittee should read the WET testing sections of Part I.A. and I.B. of the permit carefully. The permit outlines the test requirements and the required follow-up actions the permittee must take to resolve a toxicity incident. The permittee should read, along with the documents listed in Part I.B of the permit, the Colorado Water Quality Control Division Biomonitoring Guidance Document, dated July 1, 1993. This document outlines the criteria used by the Division in such areas as granting relief from WET testing, modifying test methods and changing test species. The permittee should be aware that some of the conditions outlined above may be subject to change if the facility experiences a change in discharge, as outlined in Part II.A.1 of the permit. Such changes shall be reported to the Division immediately.

5. *Stormwater: This facility is covered by a separate stormwater permit.*

6. *Economic Reasonableness Evaluation:*

Section 25-8-503(8) of the revised (June 1985) Colorado Water Quality Control Act required the Division to "determine whether or not any or all of the water quality standard based effluent limitations are reasonably related to the economic, environmental, public health and energy impacts to the public and affected persons, and are in furtherance of the policies set forth in sections 25-8-192 and 25-8-104."

The Regulations for the State Discharge Permit System, 6.1.0, further define this requirement under 6.12.0 and state: "Where economic, environmental, public health and energy impacts to the public and affected persons have been considered in the classifications and standards setting process, permits written to meet the standards may be presumed to have taken into consideration economic factors unless:

a) A new permit is issued where the discharge was not in existence at the time of the classification and standards rulemaking, or

b) In the case of a continuing discharge, additional information or factors have emerged that were not anticipated or considered at the time of the classification and standards rulemaking."

The evaluation for this permit shows that the Water Quality Control Commission, during their proceedings to adopt the Classification and Numeric Standards for the San Juan River Basin, considered economic reasonableness.

Furthermore, this is not a new discharger and no new information has been presented regarding the classifications and standards. Therefore, the water quality standard-based effluent limitations of this permit are determined to be reasonably related to the economic, environmental, public health and energy impacts to the public and affected persons and are in furtherance of the policies set forth in Sections 15-8-102 and 104.

B. *Monitoring*

1. *Effluent Monitoring - Effluent monitoring will be required as shown in Table VI-3. Refer to the permit for locations of monitoring points.*

Table VI-3 -Effluent Monitoring Requirements

Effluent Parameter	*Monitoring Frequency*	*Sample Type*
For Point 004X - Applicable Only Until Treatment of Cement Creek Begins		
Whole Effluent Toxicity, Chronic	*Quarterly*	*3 Composites*

***Table VI-3 -Effluent Monitoring Requirements** - cont'd*

Effluent Parameter	*Monitoring Frequency*	*Sample Type*
	For Point 004A	
Flow, MGD	*Weekly*	*Instantaneous*
pH, su	*Weekly*	*In-Situ*
Oil and Grease, mg/l	*Weekly*	*Visual*
TSS, mg/l	*Weekly*	*Grab*
Cadmium, Total, mg/l	*Weekly*	*Grab*
Copper, Total, mg/l	*Weekly*	*Grab*
Lead, Total, mg/l	*Weekly*	*Grab*
Zinc, Total, mg/l	*Weekly*	*Grab*
TDS, mg/l	*Quarterly*	*Grab*

For every outfall with oil and grease monitoring, in the event an oil sheen or floating oil is observed, a grab sample shall be collected, analyzed, and reported on the appropriate DMR. In addition, corrective action shall be taken immediately to mitigate the discharge of oil and grease. A description of the corrective action taken should be included with the DMR.

C. *Reporting*

1. *Discharge Monitoring Report: Sunnyside Gold Corporation must submit a Discharge Monitoring Report (DMR) on a monthly basis to the Division. This report should contain the required summarization of the test results for parameters shown in Table VI-3 and Part I.B.1 of the permit. See the permit, for details on such submission.*

2. *Special Reports - Special reports are required in the event of a spill, bypass, or other noncompliance. Please refer to Part I, Section D.4. of the permit for reporting requirements.*

D. *Additional Terms and Conditions*

1. *Signatory Requirements - Signatory requirements for reports and submittals are discussed in Part I, Section D.1. of the permit.*
2. *Materials Containment Plan: On February, 1988, the permittee submitted an engineered spill plan. An update to the plan is required to be filed within 90 days of the permit effective date, detailing all changes which have occurred since the original submittal. If no changes have occurred, a letter to this effect is required. For specific requirements, refer to Part I.E. of the permit.*

E. *Waste Minimization/Pollution Prevention*

Waste minimization and pollution prevention are two terms that are becoming increasingly more common in industry today. Waste minimization includes reducing the amount of waste at the source through changes in industrial processes, and reuse and recycling of wastes for the original or some other purpose such as materials recovery or energy production. Pollution prevention goes hand-in-hand with waste minimization. If the waste is eliminated at the front of the line, it will not have to be treated at the end of the line. The direct benefits to the industry are often significant - both in terms of increased profit and in public relations. This program can affect all areas of process and waste control with which your industry deals. Elimination or reduction of a wastewater pollutant can also result in a reduction of an air pollutant or a reduction in the amount of hazardous materials that you have to handle and/or dispose of. This discharge permit does not specifically dictate waste minimization conditions at this time. We strongly encourage the permittee to develop a waste minimization plan. Several industries have already developed plans and found that implementation resulted in substantial savings. Both the Colorado Department of Public Health and the Environment and EPA have information and resources available to help you explore this topic.

F. Permit Termination

The permittee will be released from further permit responsibilities in accordance with conditions specified in the consent agreement.

VII. CHANGES MADE AFTER PUBLIC NOTICE

Three Sunnyside Gold Corporation permits were sent to public notice - CO-0027529, which is for the American Tunnel discharge, CO-0036056, which is for the Terry Tunnel discharge, and CO-0044768, which is for mine remediation projects in the Upper Animas basin. In addition, a related draft Consent Decree that has been negotiated between the Division and the mining company was in the same public notice.

Responses to the public notice were received from private citizens, a committee of members of the Animas River Stakeholders group, several environmental and mining industry oriented groups, several governmental agencies, and the Sunnyside Gold Corporation itself.

Most of the comments received were related to the consent decree, which is being dealt with separately from the discharge permits.

With respect to this discharge permit, the following issues were raised:

1) ***Comment:** The CDPS permits must function as stand alone documents, regardless of the existence of the consent decree.*

 ***Response:** The permits were reviewed to find any terms or conditions that through reference were dependent upon the contents of the consent decree. Where such permit conditions were found, they were revised to more explici describe the intended permit requirements. However, there is one exception to this that should be noted. Each draft permit included a termination clause which referred directly back to the consent decree. While this clause was modified to additionally require compliance with State permit regulations, it was determined that it would not be practical to include the consent decree's conditions related to permit termination within the permits themselves. Also, the termination clauses do not affect the enforceability of the permits. For these reasons, the termination clauses' references to the consent decree were retained.*

2) ***Comment:** For the American Tunnel permit, until it can be shown that there has been a substantial reduction in the toxicity of Cement Creek downstream of the tunnel discharge over present conditions, Whole Effluent Toxicity (WET) monitoring and limits should apply to the Discharge.*

 ***Response:** Cement Creek is not classified for aquatic life use. Therefore, it would be inappropriate to perform instream WET testing for Cement Creek. The first downstream segment classified for aquatic life is the Animas River. While the Division is concerned about controlling the toxic effects of the American Tunnel upon the Animas River, it would also be inappropriate to perform any instream WET testing there, due to the large number of other pollutant sources that may also be contributing toxicity.*

 Instead, the Division has relied upon calculations involving flows and pollutant concentrations to show that treatment of Cement Creek will reduce significant pollutant concentrations at the mouth of Cement Creek. Since toxicity is most often demonstrated, and may be defined by the presence of a concentration vs toxicity relationship, where an increase in concentration results in an increase in toxicity, it can be argued that a reduction in pollutant concentrations at the mouth of Cement Creek is likely to also produce a reduction in toxicity.

 However, in order to maintain consistency with other permits, the permit will require continued WET monitoring and limits until the treatment of Cement Creek begins. This will be accomplished through the addition of a separate outfall for WET testing.

Rich Horstmann
May 2, 1996

Permit No.: CO-0027529
County: San Juan

AUTHORIZATION TO DISCHARGE UNDER THE

COLORADO DISCHARGE PERMIT SYSTEM

In compliance with the provisions of the Colorado Water Quality Control Act, (25-8-101 et seq., CRS, 1973 as amended) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq.; the "Act") the

SUNNYSIDE GOLD CORPORATION

is authorized to discharge from **the American Tunnel treatment facility** located **in the T42N, R7W, NE1/4 S21, approx. 200 ft. south of the endpost of the west fork of Colorado Hwy 110 starting at Silverton, CO.** to **Cement Creek** in accordance with effluent limitations, monitoring requirements and other conditions set forth in Part I and II hereof. All discharges authorized herein shall be consistent with the terms and conditions of this permit.

The applicant may demand an adjudicatory hearing within thirty (30) days of the issuance of the final permit determination, per the Regulations for the State Discharge Permit System, 6.8.0 (1). Should the applicant choose to contest any of the effluent limitations, monitoring requirements or other conditions contained herein, the applicant must comply with Section 24-4-104 CRS and the Regulations for the State Discharge Permit System. Failure to contest any such effluent limitation, monitoring requirement, or other condition, constitutes consent to the condition by the Applicant.

This permit and the authorization to discharge shall expire at midnight, **May 31, 2001**.

Issued and Signed this 6th day of May 1995

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

J. David Holm

J. David Holm, Director
Water Quality Control Division

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PART I

A. DEFINITION OF EFFLUENT LIMITATIONS

1. Effluent Limitations

Beginning no later than the effective date of this permit and lasting through **May 31, 2001,** the permittee is authorized to discharge from outfall **004A, the outfall from the fourth treatment pond to Cement Creek, and 004X, which is physically the same point, but which will be used for chronic WET testing purposes until treatment of Cement Creek begins. After treatment of Cement Creek begins, the permittee may report "no discharge" on the DMR for this point, and then request inactivation of the discharge point.**

In accordance with the Water Quality Control Commission Regulations for Effluent Limitations, Section 10.1.3, and Regulations for State Discharge Permit System, Section 6.9.2, 5 C.C.R. 1002-2, the permitted discharge shall not contain effluent parameter concentrations which exceed the following limitations specified below or exceed the specified flow limitation.

	Discharge Limitations - Maximum Concentrations		
Effluent Parameter	**30-Day Avg.**	**7-Day Avg.**	**Daily Max.**
Limits for Point 004A			
Flow, MGD (min-max)	Report	N/A	Report
pH, su (min-max)	N/A	N/A	7.0 - 10.0
Oil and Grease, mg/l	N/A	N/A	10
TSS, mg/l	20	30	N/A
Cadmium, Total, mg/l	0.05	N/A	0.10
Copper, Total, mg/l	0.15	N/A	0.30
Lead, Total, mg/l	0.30	N/A	0.60
Zinc, Total, mg/l	0.75	N/A	1.5
Limits for Point 004X			
Whole Effluent Toxicity, Chronic Lethality	N/A	N/A	See Part I.A.2.

There shall be no discharge of floating solids.

2. Whole Effluent Toxicity - Chronic Lethality Limitation

Beginning upon the effective date of this permit, there shall be no statistically significant difference in lethality (at the 95% confidence level) between the control and any effluent concentration less than or equal to **10.3%** effluent. Such limitation shall apply as a daily maximum.

3. Whole Effluent Toxicity Testing Requirements - Chronic WET Testing-Outfall(s): 004X

(a) Testing and Reporting Requirements

Tests shall be done at the frequency listed in Part I.B.1. Test results shall be reported along with the Discharge Monitoring Report (DMR) submitted for the reporting period during which the sample was taken. (i.e., WET testing results for the first calendar quarter ending March 31 shall be reported with the DMR due April 28.) The results shall be submitted on the Chronic Toxicity Test report form, available from the Division. Copies of these reports are to be submitted to both the Division and EPA along with the DMR.

The permittee shall conduct each chronic WET test in general accordance with methods described Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA/600/4-89/001 or the most current edition, except as modified by the most current Division guidance document entitled Guidelines for Conducting Whole Effluent Toxicity Tests. The permittee shall conduct such tests using Ceriodaphnia dubia and fathead minnows.

(b) Failure of Test and Division Notification **(Beginning on Effective Date of Limitation)**

Beginning on the effective date of the limitation, a chronic WET test is failed whenever there is a statistically significant difference in lethality between the control and any effluent concentration less than or equal to the instream waste concentration ("IWC"). The IWC for this permit has been determined to be **10.3%**. The permittee must provide written notification of the failure of a WET test to the Division, along with a statement as to whether a Preliminary Toxicity Investigation ("PTI")/Toxicity Identification Evaluation ("TIE") or accelerated testing is being performed. **Notification must be received by the Division within 21 calendar days of the demonstration of chronic WET in the routine required test.** "Demonstration" for the purposes of Parts I.A.4(b),(c),(d), (e) and (g) means no later than the last day of the laboratory test.

(c) Automatic Compliance Schedule Upon Failure of Test

If a routine chronic WET test is failed, the following automatic compliance schedule shall apply. As part of this the permittee shall either:

(i) proceed to conduct the PTI/TIE investigation as described in Part I.A.4.e, or

(ii) conduct accelerated testing using the single species found to be more sensitive.

If accelerated testing is being performed, the permittee shall provide written notification of the results within 14 calendar days of completion of the "Pattern of Toxicity"/"No Toxicity" demonstration. Testing will be at least once every two weeks for up to five tests until; 1) two consecutive tests fail or three of five tests fail, in which case a pattern of toxicity has been demonstrated or 2) two consecutive tests pass or three of five tests pass, in which case no pattern of toxicity has been found. If no pattern of toxicity is found the toxicity episode is considered to be ended and routine testing is to resume. If a pattern of toxicity is found, a PTI/TIE investigation is to be performed. If a pattern of toxicity is not demonstrated but a significant level of erratic toxicity is found, the Division may require an increased frequency of routine monitoring or some other modified approach.

(e) PTI/TIE

The results of the PTI/TIE investigation are to be received by the Division within 120 days of the demonstration of chronic WET in the routine test, as defined above, or if accelerated testing is performed, the date the pattern of toxicity is demonstrated. A status report is to be provided to the Division at the 30, 60 and 90 day points of the PTI/TIE investigation. The Division may extend the time frame for investigation where reasonable justification exists. A request for an extension must be made in writing and received prior to the 120 day deadline. Such request must include a justification and supporting data for such an extension.

The permittee may use the time for investigation to conduct a PTI or move directly into the TIE. A PTI consists of a brief search for possible sources of WET, which might reveal causes of such toxicity and appropriate corrective actions more simply and cost effectively than a formal TIE. If the PTI allows resolution of the WET incident, the TIE need not necessarily be conducted. If, however, WET is not identified or resolved during the PTI, the TIE must be conducted within the allowed 120 day time frame.

Any permittee that is required to conduct a PTI/TIE investigation shall do so in conformance with procedures identified in the following documents, or as subsequently updated: 1) Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I, EPA/600/6-91/005F May 92, 2) Methods for Aquatic Toxicity Identification Evaluations, Phase I Toxicity Characterization Procedures, EPA/600/6-91/003 Feb. 91 and 3) Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures, EPA/600/3-88/035 Feb. 1989.

A fourth document in this series is Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures, EPA/600/3-88/036 Feb. 1989. As indicated by the title, this procedure is intended to confirm that the suspected toxicant is truly the toxicant. This investigation is optional.

Within 90 days of the determination of the toxicant or no later than 210 days after demonstration of toxicity, whichever is sooner, a control program is to be developed and received by the Division. The program shall set down a method and procedure for elimination of the toxicity to acceptable levels.

(f) Request For Relief

The permittee may request relief from further investigation and testing where the toxicant has not been determined and the Division has determined suitable treatment does not appear possible. In requesting such relief, the permittee shall submit material sufficient to establish the following:

(i) It has complied with terms and conditions of the permit compliance schedule for the PTI/TIE investigation and other appropriate conditions as may have been required by the Division;

(ii) During the period of the toxicity incident it has been in compliance with all other permit conditions, including, in the case of a POTW, pre-treatment requirements;

(iii) During the period of the toxicity incident it has properly maintained and operated all facilities and systems of treatment and control; and

(iv) Despite the circumstances described in paragraphs (i) and (iii) above, the source and/or cause of toxicity could not be located or resolved.

If deemed appropriate by the Division, the permit or the compliance schedule may be modified to revise the ongoing monitoring and toxicity investigation requirements to avoid an unproductive expenditure of the permittee's resources, provided that the underlying obligation to eliminate any continuing exceedance of the toxicity limit shall remain.

(g) Spontaneous Disappearance

If toxicity spontaneously disappears at any time after a test failure, the permittee shall notify the Division in writing within 14 days of a demonstration of disappearance of the toxicity. The Division may require the permittee to develop and submit additional information which may include, but is not limited to, the results of additional testing. If no pattern of toxicity is identified or recurring toxicity is not identified, the toxicity incident response is considered closed and normal WET testing shall resume.

(h) Toxicity Reopener

This permit may be reopened and modified (following proper administrative procedures) to include new compliance dates, additional or modified numerical permit limitations, a new or different compliance schedule, a change in the whole effluent toxicity testing protocol, or any other conditions related to the control of toxicants if one or more of the following events occur:

(i) Toxicity has been demonstrated in the effluent and the permit does not contain a toxicity limitation.

(ii) The PTI/TIE results indicate that the toxicant (s) represent pollutant(s) that may be controlled with specific numerical limits, and the Division agrees that the numerical controls are the most appropriate course of action.

(iii) The PTI/TIE reveals other unique conditions or characteristics which, in the opinion of the Division, justify the incorporation of unanticipated special conditions in the permit.

(iv) The Division may reopen this permit and impose chronic toxicity limits where chronic toxicity is identified.

B. MONITORING REQUIREMENTS

1. Frequency and Sample Type

In order to obtain an indication of the probable compliance or noncompliance with the effluent limitations specified in Part I.A.1, the permittee shall monitor all effluent parameters at the following frequencies. Such monitoring will begin immediately and last for the life of the permit unless otherwise noted. The results of such monitoring shall be reported on the Discharge Monitoring Report form (See Part I.E.)

Effluent Parameter	Monitoring Frequency	Sample Type
	For Point 004A	
Flow, MGD	Weekly	Instantaneous
pH, su	Weekly	In-Situ
Oil and Grease, mg/l	Weekly	Visual
TSS, mg/l	Weekly	Grab
Cadmium, Total, mg/l	Weekly	Grab
Copper, Total, mg/l	Weekly	Grab
Lead, Total, mg/l	Weekly	Grab
Zinc, Total, mg/l	Weekly	Grab
TDS, mg/l	Quarterly	Grab
For Point 004X - Applicable Only Until Treatment of Cement Creek Begins		
Whole Effluent Toxicity, Chronic	Quarterly	3 Composites

Self-monitoring sampling by the permittee for compliance with the monitoring requirements specified above shall be performed at the following location(s): **004A and 004X, the outfall from the fourth treatment pond to Cement Creek.**

If the permittee, using the approved analytical methods, monitors any parameter more frequently than required by this permit, then the results of such monitoring shall be included in the calculation and reporting of the values required in the Discharge Monitoring Report Form (DMRs) or other forms as required by the Division. Such increased frequency shall also be indicated.

Oil and Grease Monitoring

For every outfall with oil and grease monitoring, in the event an oil sheen or floating oil is observed, a grab sample shall be collected, analyzed, and reported on the appropriate DMR. In addition, corrective action shall be taken immediately to mitigate the discharge of oil and grease. A description of the corrective action taken should be included with the DMR.

C. DEFINITIONS OF TERMS

1. "Daily Maximum limitation" means the limitation for this parameter shall be applied as an instantaneous maximum (or, for pH or DO, instantaneous minimum) value. The instantaneous value is defined as the analytical result of any individual sample. DMRs shall include the maximum (and/or minimum) of all instantaneous values within the calendar month. Any instantaneous value beyond the noted daily maximum limitation for the indicated parameter shall be considered a violation of this permit.

2. "Grab" sample, is a single "dip and take" sample so as to be representative of the parameter being monitored.

3. "In-situ" measurement is defined as a single reading, observation or measurement taken in the field at the point of discharge.

4. "Instantaneous" measurement is a single reading, observation, or measurement performed on site using existing monitoring facilities.

5. "Quarterly measurement frequency" means samples may be collected at any time during the calendar quarter if a continual discharge occurs. If the discharge is intermittent, then samples shall be collected during the period that discharge occurs.

6. "Seven (7) day average" means, with the exception of fecal coliform bacteria, the arithmetic mean of all samples collected in a seven (7) consecutive day period. For fecal coliform bacteria, it is the geometric mean of all samples taken in a seven (7) consecutive day period. Such seven (7) day averages shall be calculated for all calendar weeks, which are defined as beginning on sunday and ending on Saturday. If the calendar week overlaps two months (i.e. the Sunday is in one month and the Saturday in the following month), the seven (7) day average calculated for that calendar week shall be associated with the month that contains the Saturday. Samples may not be used for more than one (1) reporting period. (Not applicable to fecal coliform determinations.)

7. "Thirty (30) day average" means, except for fecal coliform bacteria, the arithmetic mean of all samples collected during a thirty (30) consecutive-day period. For fecal coliform bacteria, it is the geometric mean of all samples collected in a thirty (30) day period. The permittee shall report the appropriate mean of all self-monitoring sample data collected during the calendar month on the Discharge Monitoring Reports. Samples shall not be used for more than one (1) reporting period.

8. "Total Metals" means the concentration of metals determined on an unfiltered sample following vigorous digestion (Section 4.1.3), or the sum of the concentrations of metals in both the dissolved and suspended fractions, as described in "*Manual of Methods for Chemical Analysis of Water and Wastes*," U.S. Environmental Protection Agency, March 1979, or its equivalent.

9. "Visual" observation is observing the discharge to check for the presence of a visible sheen or floating oil.

10. "Water Quality Control Division" or "Division" means the state Water Quality Control Division as established in 25-8-101 et al.)

Additional relevant definitions are found in the Colorado Water Quality Control Act, CRS §§ 25-8-101 et seq., the *Regulations for the State Discharge Permit System*, 5 CCR 1002-2, § 6.1.0 et seq and other applicable regulations.

D. SPECIAL REQUIREMENTS

1. Materials Containment Plan

Pursuant to Sections 6.9.3 (6) and (9) of the Regulations for the State Discharge Permit System, the permittee is required to submit a Materials Containment Plan. Such a plan was previously submitted to the Division. An update of the plan shall be submitted to the Division within ninety (90) days after the effective date of this permit and must be implemented. The update of the plan shall include changes in the information and procedures for the prevention and containment of spills of materials used, processed or stored at the facility which if spilled would have a reasonable probability of having a visible or otherwise detrimental impact on waters of the State [1/2]. The updated plan shall include, but not necessarily be limited to:

a. An updated history of the spills which have occurred in the three (3) years preceding the effective date of this permit. The history shall include a discussion on the cause of the spills and a the preventative measures designed to eliminate them from reoccurring;

b. An update of the reporting system which will be used to notify, at a minimum, responsible facility management, the Division, the Environmental Protection Agency, downstream water users within 5 miles downstream of the facility, and local health officials;

c. A description of any changes in the preventative facilities (including overall facility plot) which prevent, contain, or treat spills and unplanned discharges;

d. A current list which includes the volumes or quantities of all materials used, processed, or stored at the facility which represent a potential spill threat to surface waters. The location of stored material shall be indicated on the facility plot submitted for item c;

e. An implementation schedule for additional facilities which might be required in item c, but which are not yet operational;

f. A current list of available outside contractors, agencies, or other sources which could be utilized in the event of a spill in order to clean up its effects. If the facility is capable of handling spills in-house, this shall be documented in the plan;

g. Provision for yearly review and updating of the contingency plan, plus resubmission of the plan to the Division if conditions and/or procedures at the facility change the original plan.

The foregoing provisions shall in no way render inapplicable those requirements imposed by the Federal Water Pollution Control Act, 33 U.S.C. § 1321, regulations promulgated thereunder, the Colorado Water Quality Control Act, and regulatic promulgated thereunder. It is recommended that this plan be prepared by a professional engineer registered in the State of Colorado.

Nothing herein contained shall be construed as allowing any discharge to waters of the State other than through the discharge points specifically authorized in this permit. Nothing herein contained shall be construed as excusing any liability the permittee might have, civil or criminal, for any spill.

The submittal of a Spill Prevention Control and Countermeasure Plan (SPCC Plan) as required by 40 CFR Part 112 may satisfy all or part of this requirement. Should additional materials exist on site which are not addressed in the SPCC Plan, addressing those materials as per the above is required.

1/ If there is no such material present at the site, this shall be indicated in writing and submitted to the Division for review.

2/ If there is material present but the permittee feels there is not a reasonable probability of a spill impacting waters of the State, this shall be documented in writing and submitted to the Division for review. This documentation shall include; 1) distance to nearest surface waters, and; 2) a detailed description of any structure which prohibits the release of material onto the ground or into a conveyance system.

2. Stormwater Requirements

Stormwater permitting requirements, for discharges consisting of stormwater only, have been and will continue to be implemented through a separate stormwater permit.

E. GENERAL MONITORING, SAMPLING AND REPORTING REQUIREMENTS

1. Routine Reporting of Data

Reporting of the data gathered in compliance with Part I.B.1 shall be on a **monthly** basis. Reporting of all data gathered shall comply with the requirements of Part I.E. (General Requirements). Monitoring results shall be summarized for each calendar month and reported on Division approved discharge monitoring report (DMR) forms (EPA form 3320-1). The forms shall be mailed to the agencies listed below so they are received no later than the 28th day of the following month. If no discharge occurs during the reporting period, "No Discharge" shall be reported.

The DMR forms consist of four pages - the top "original" copy, and three attached no-carbon-required copies. After the DMR form has been filled out and signed, the four copies must be separated and distributed as follows:

The first **original** signed copy of each discharge monitoring report (DMR) shall be submitted to the Division at the following address:

Colorado Department of Public Health and Environment
WQCD-PE-B2
4300 Cherry Creek Drive South
Denver, Colorado 80222-1530

The first **duplicate** signed copy of each discharge monitoring report (DMR) shall be submitted to the following agency:

U.S. Environmental Protection Agency
Water Management Division
NPDES Branch 8WM-C
999 18th Street, Suite 500
Denver, CO 80202-2466

The third and fourth copies are for the permittee records. The Discharge Monitoring Report forms shall be filled out accurately and completely in accordance with requirements of this permit and the instructions on the forms. They shall be signed by an authorized person as identified in Part I.E.6.

Calculations for all limitations which require the averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Division in the permit.

2. **Representative Sampling**

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, before the effluent joins or is diluted by any other wastestream, body of water, or substance. Monitoring points shall not be changed without notification to and approval by the Division.

If the permittee monitors at the point of discharge any pollutant limited by the permit more frequently than required by the permit, using approved test procedures or as specified in the permit, the result of this monitoring shall be included in the calculation and reporting of data to the Division.

3. **Analytical and Sampling Methods for Monitoring**

The permittee shall install, calibrate, use and maintain monitoring methods and equipment, including biological and indicated pollutant monitoring methods. All sampling shall be performed by the permittee according to specified methods in 40 C.F.R. Part 136; methods approved by EPA pursuant to 40 C.F.R. Part 136; or methods approved by the Division, in the absence of a method specified in or approved pursuant to 40 C.F.R. part 136. **The analytical method selected for a parameter shall be the one that can measure the lowest detected limit for that parameter unless the permit limitation or stream standard for those parameters not limited, is within the testing range of another approved method.** When requested in writing, the Division may approve an alternative analytical procedure or any significant modification to an approved procedure.

When the most sensitive analytical method which complies with this part, has a detection limit greater than or equal to the permit limit, the permittee shall report "less than (the detectable limit)," as appropriate. Such reports shall not be considered as violations of the permit limit. The present lowest method detection limits for specific parameters (which have limitations which are, in some cases, less than or equal to the detection limit) are as follows:

Arsenic	0.01 mg/ℓ
Benzene	0.001 mg/ℓ
Total Residual Chlorine	0.05 mg/ℓ
Cadmium	0.0003 mg/ℓ
Chromium	0.01 mg/ℓ
Chromium, Hexavalent	0.01 mg/ℓ
Copper	0.005 mg/ℓ
Lead	0.005 mg/ℓ
Total Mercury	0.00025 mg/ℓ
Nickel	0.05 mg/ℓ
Selenium	0.01 mg/ℓ
Silver	0.0002 mg/ℓ
Zinc	0.05 mg/ℓ

These limits apply to the total recoverable or the potentially dissolved fraction of metals.

For hexavalent chromium, samples must be unacidified so that dissolved concentrations will be measured rather than potentially dissolved concentrations. Procedure for determining settleable solids is contained in 40 CFR 434.64. The method detection limit for measuring settleable solids under this part shall be 0.4 ml/l.

4. Records

The permittee shall establish and maintain records. Those records shall include the following:

a. The date, type, exact location, and time of sampling or measurements;
b. The individual(s) who performed the sampling or measurements;
c. The date(s) the analyses were performed;
d. The individual(s) who performed the analyses;
e. The analytical techniques or methods used;
f. The results of such analyses; and
g. Any other observations which may result in an impact on the quality or quantity of the discharge as indicated in 40 CFR 122.44 (i)(1)(iii).

The permittee shall retain for a minimum of three (3) years records of all monitoring information, including all original strip chart recordings for continuous monitoring instrumentation, all calibration and maintenance records, copies of all reports required by this permit and records of all data used to complete the application for this permit. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the permittee or when requested by the Division or EPA.

5. Flow Measuring Device

If not already a part of the permitted facility, within ninety (90) days after the effective date of the permit, a flow measuring device shall be installed to give representative values of effluent quantities at the respective discharge points. Unless specifically exempted, or modified in Part I.E.5 of this permit, a flow measuring device will be applicable at all designated discharge points.

At the request of the Division, the permittee shall show proof of the accuracy of any flow-measuring device used in obtaining data submitted in the monitoring report. The flow-measuring device must indicate values within ten (10) percent of the actual flow being discharged from the facility.

6. **Signatory and Certification Requirements**

a. All reports and other information required by the Division, shall be signed and certified for accuracy by the permittee in accord with the following criteria:

(1) In the case of corporations, by a principal executive officer of at least the level of vice-president or his or her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the form originates;

(2) In the case of a partnership, by a general partner;

(3) In the case of a sole proprietorship, by the proprietor;

(4) In the case of a municipal, state, or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.

b. All reports required by permits, and other information requested by the Division shall be signed by a person as described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

(1) The authorization is made in writing by a person described above;

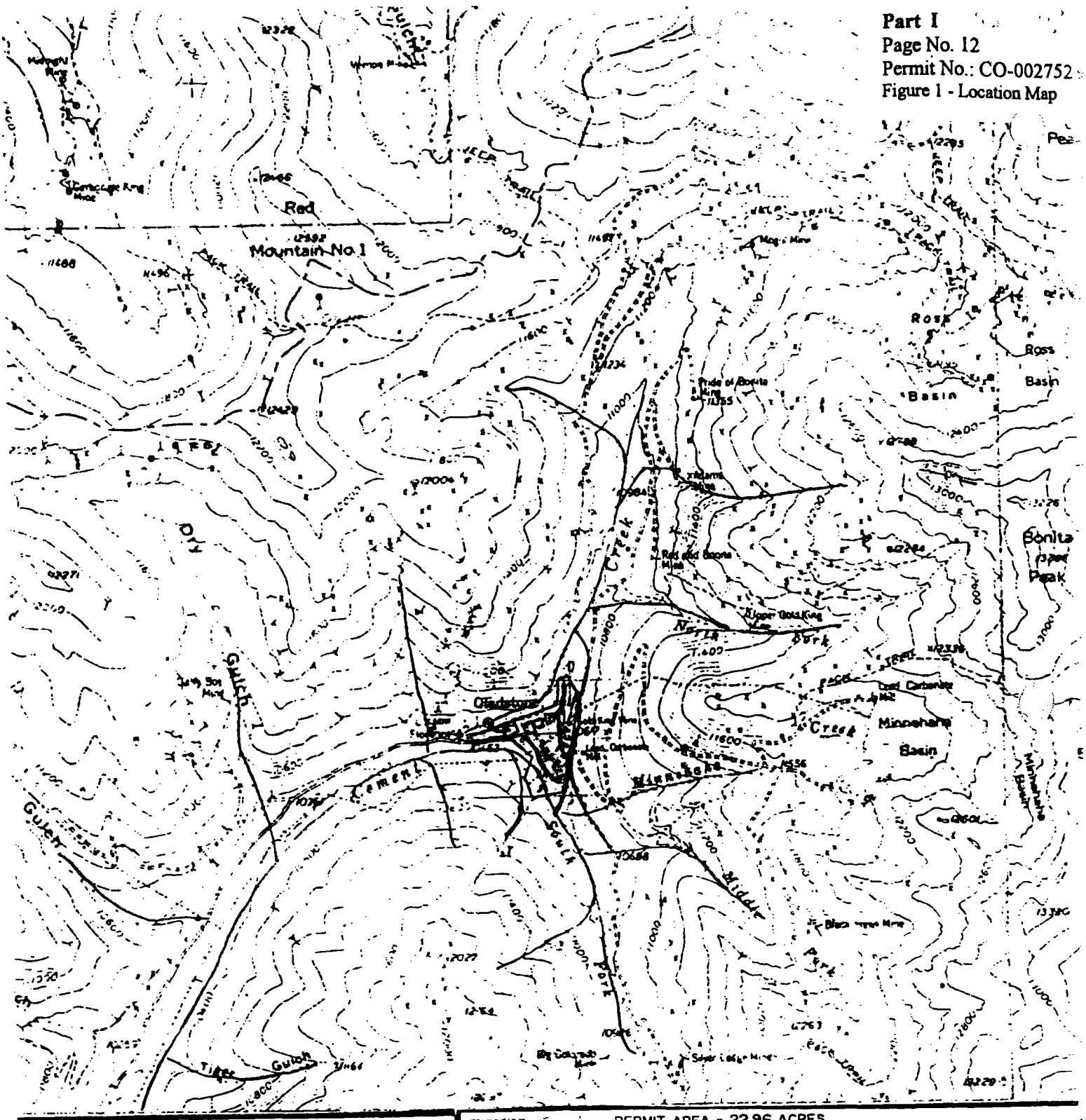
(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and,

(3) The written authorization is submitted to the Division.

If an authorization as described in this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of this section must be submitted to the Division prior to or together with any reports, information, or applications to be signed by an authorized representative.

The permittee, or the duly authorized representative shall make and sign the following certification on all such documents:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."



PERMIT AREA = 22.96 ACRES
PRMIT AREA DRAINAGE
NATURAL WATER DRAINAGE
WATER MONITORING STATION

SUNNYSIDE GOLD CORPORATION

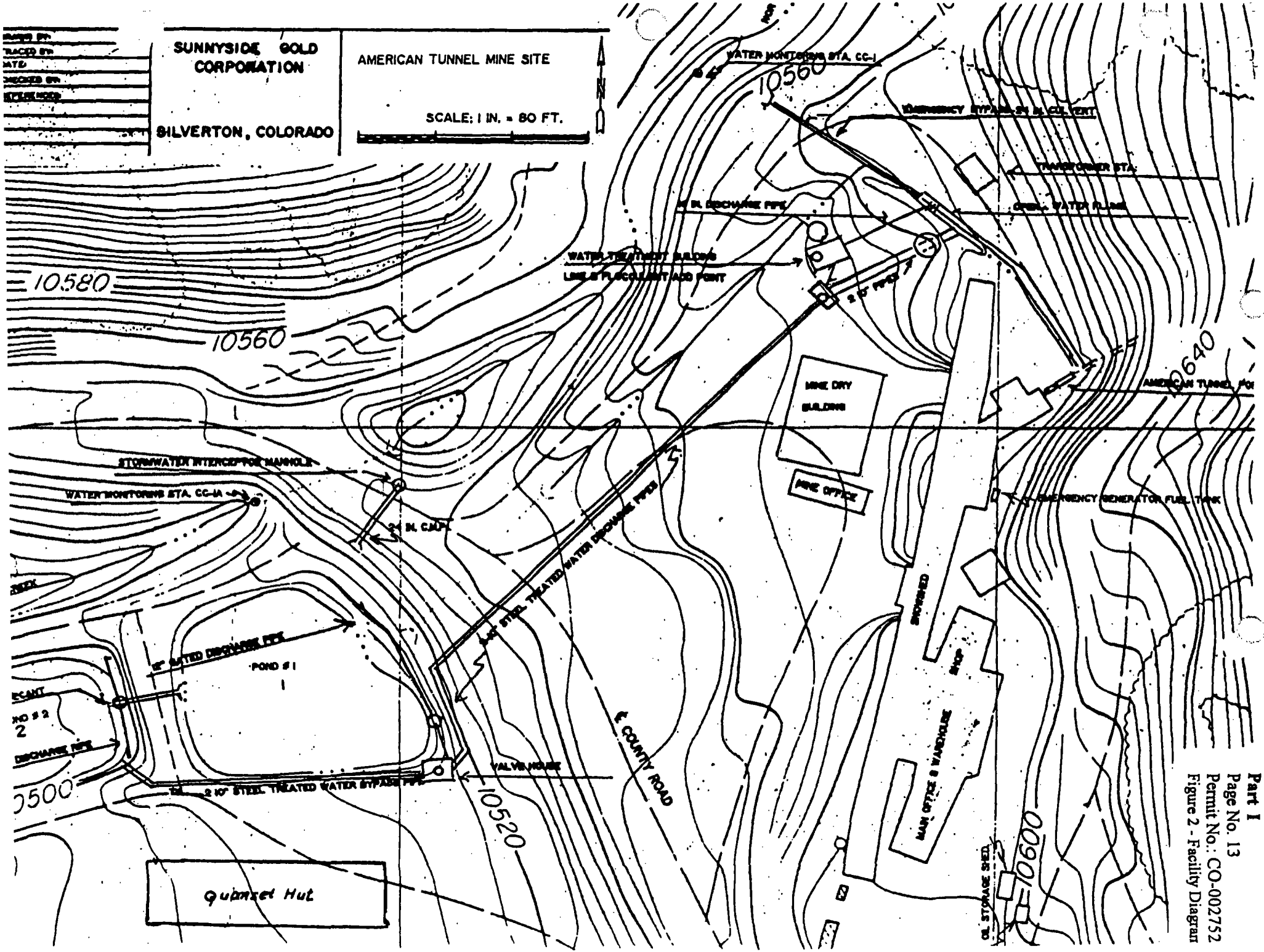
SAN JUAN COUNTY

SILVERTON, COLORADO

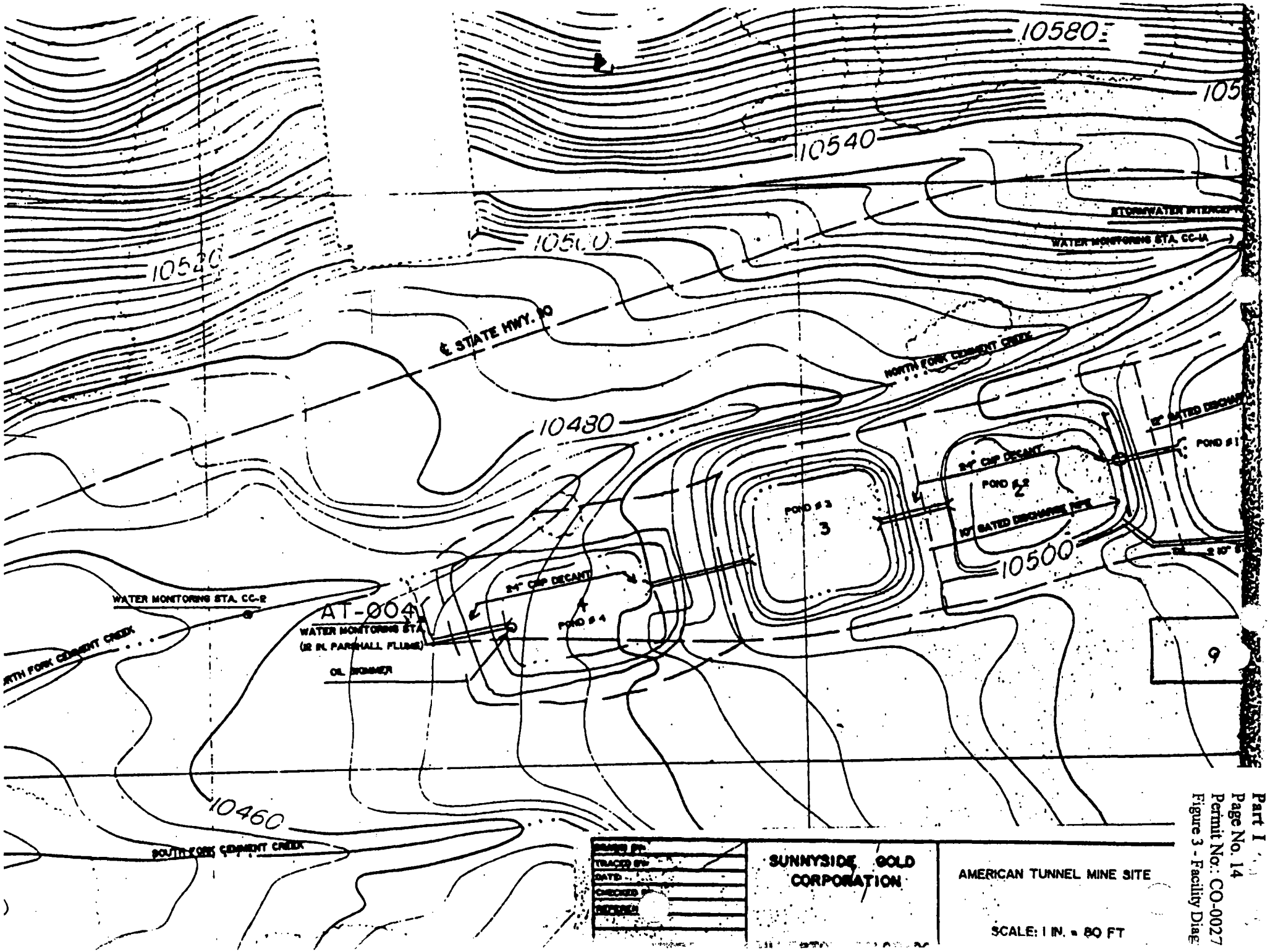
U.S.G.S. QUAD. IRONTON PARK

SCALE: 1" = 2000'
CONTOUR INTERVAL 40'

0 2000 4000 6000 800



Part I
Page No. 13
Permit No.: CO-002752
Figure 2 - Facility Diagram



Part I
Page No. 14
Permit No.: CO-0027
Figure 3 - Facility Diag

A. NOTIFICATION REQUIREMENTS

1. Notification to Parties

All notification requirements under this section shall be directed as follows:

a. Oral Notifications, other than for spills, during normal business hours shall be to:

Permits and Enforcement Section
Water Quality Control Division
Telephone : (303) 692-3590

Spills notifications at any time and other notifications after hours shall be to :

Emergency Response Unit
Office of the Environment
Telephone No.: (303)-756-4455

b. Written notification shall be to:

Industrial Permits and Enforcement Program
Colorado Department of Public Health and Environment
WQCD-PE-B2
4300 Cherry Creek Drive South
Denver, Colorado 80222

2. Change in Discharge

The permittee shall notify the Division, in writing, of any planned physical alterations or additions to the permitted facility. Notice is required only when:

a. The alteration or addition could significantly change the nature or increase the quantity or pollutants discharged; or

b. The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported pursuant to an approved land application plan.

The permittee shall give advance notice to the Division of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

Whenever notification of any planned physical alterations or additions to the permitted facility is required pursuant to this section,, the permittee shall furnish the Division such plans and specifications which the Division deems reasonably necessary to evaluate the effect on the discharge, the stream, or ground water. If the Division finds that such new or altered discharge might be inconsistent with the conditions of the permit, the Division shall require a new or revised permit application and shall follow the procedures specified in Sections 6.6.0 through 6.7.0, and 6.16.0 of the Regulations for the State Discharge Permit System.

3. **Special Notifications - Definitions**

 a. Bypass: The intentional diversion of waste streams from any portion of a treatment facility.

 b. Severe Property Damage: Substantial physical damage to property at the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. It does not mean economic loss caused by delays in production.

 c. Spill: An incident in which flows or solid materials are accidentally or unintentionally allowed to flow or escape so as to be lost from the treatment, processing or manufacturing system which may cause or threaten pollution of state waters.

 d. Upset: An exceptional incident in which there is unintentional and temporary noncompliance with permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventative maintenance, or careless or improper operation.

4. **Noncompliance Notification**

 a. If, for any reason, the permittee does not comply with or will be unable to comply with any discharge limitations or standards specified in this permit, the permittee shall, at a minimum, provide the Division and EPA with the following information:

 (1) A description of the discharge and cause of noncompliance;

 (2) The period of noncompliance, including exact dates and times and/or the anticipated time when the discharge will return to compliance; and

 (3) Steps being taken to reduce, eliminate, and prevent recurrence of the noncomplying discharge.

 b. The permittee shall report the following circumstances **orally within twenty-four (24) hours** from the time the permittee becomes aware of the circumstances, and shall mail to the Division a written report containing the information requested in Part II.A.3 (a) **within five (5) days** after becoming aware of the following circumstances:

 (1) Circumstances leading to any noncompliance which may endanger health or the environment regardless of the cause of the incident;

 (2) Circumstances leading to any unanticipated bypass which exceeds any effluent limitations in the permit;

 (3) Circumstances leading to any upset or spill which causes an exceedance of any effluent limitation in the permit;

 (4) Daily maximum violations for any of the pollutants limited by PART I.A of this permit and specified as requiring 24 hour notification. This includes any toxic pollutant or hazardous substance or any pollutant specifically identified as the method to control any toxic pollutant or hazardous substance.

 c. The permittee shall report instances of non-compliance which are not required to be reported within 24-hours at the time Discharge Monitoring Reports are submitted. The reports shall contain the information listed in sub-paragraph (a) of this section.

5. **Other Notification Requirements**

 Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule in the permit shall be submitted no later than fourteen (14) days following each scheduled date, unless otherwise provided by the Division.

 The permittee shall notify the Division, in writing, thirty (30) days in advance of a proposed transfer of permit as provided in Part II.B.3.

The permittee's notification of all anticipated noncompliance does not stay any permit condition.

All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Division as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) One hundred micrograms per liter (100 ug/l);

(2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2.4-dinitrophenol and 2-methyl-4.6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

(3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Section 6.5.2(7).

(4) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

b. That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(1) Five hundred micrograms per liter (500 ug/l);

(2) One milligram per liter (1 mg/l) for antimony; and

(3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application..

(4) The level established by the Division in accordance with 40 C.F.R. § 122.44(f).

6. **Bypass Notification**

If the permittee knows in advance of the need for a bypass, a notice shall be submitted, at least ten days before the date of the bypass, to the Division. The bypass shall be subject to Division approval and limitations imposed by the Division. Violations of requirements imposed by the Division will constitute a violation of this permit.

7. **Upsets**

a. Effect of an Upset

An upset constitutes an affirmative defense to an action brought for noncompliance with permit effluent limitations if the requirements of paragraph (b) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

b. Conditions Necessary for a Demonstration of Upset

A permittee who wishes to establish the affirmative defense of upset shall demonstrate through properly signed contemporaneous operating logs, or other relevant evidence that:

(1) An upset occurred and that the permittee can identify the specific cause(s) of the upset; and

(2) The permitted facility was at the time being properly operated and maintained; and

(3) The permittee submitted proper notice of the upset as required in Part II.A.4. of this permit (24-hour notice); and

(4) The permittee complied with any remedial measure necessary to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reason able likelihood of adversely affecting human health or the environment.

In addition to the demonstration required above, a permittee who wishes to establish the affirmative defense of upset for a violation of effluent limitations based upon water quality standards shall also demonstrate through monitoring, modeling or other methods that the relevant standards were achieved in the receiving water.

c. Burden of Proof

In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

8. Discharge Point

Any discharge to the waters of the State from a point source other than specifically authorized by this permit is prohibited.

9. Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee as necessary to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by the permittee only when necessary to achieve compliance with the conditions of the permit.

10. Minimization of Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any discharge of sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. As necessary, accelerated or additional monitoring to determine the nature and impact of the noncomplying discharge is required.

11. Removed Substances

Solids, sludges, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed in accordance with applicable state and federal regulations.

For all domestic wastewater treatment works, at industrial facilities, the permittee shall dispose of sludge in accordance with all State and Federal regulations.

12. Submission of Incorrect or Incomplete Information

Where the permittee failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or report to the Division, the permittee shall promptly submit the relevant information which was not submitted or any additional information needed to correct any erroneous information previously submitted

13. Bypass

a. Bypasses are prohibited and the Division may take enforcement action against the permittee for bypass, unless:

(1) The bypass is unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There were no feasible alternatives to bypass such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and

(3) Proper notices were submitted in compliance with Part II.A.4.

b. "Severe property damage" as used in this Subsection means substantial physical damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

c. The permittee may allow a bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance or to assure optimal operation. These bypasses are not subject to the provisions of paragraph (a) above.

d. The Division may approve an anticipated bypass, after considering adverse effects, if the Division determines that the bypass will meet the conditions specified in paragraph (a) above.

14. Reduction, Loss, or Failure of Treatment Facility

The permittee has the duty to halt or reduce any activity if necessary to maintain compliance with the effluent limitations of the permit. Upon reduction, loss, or failure of the treatment facility, the permittee shall, to the extent necessary to maintain compliance with its permit, control production, control sources of wastewater, or all discharges, until the facility is restored or an alternative method of treatment is provided. This provision also applies to power failures, unless an alternative power source sufficient to operate the wastewater control facilities is provided.

It shall not be a defense for a permittee in an enforcement action that it would be necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

B. RESPONSIBILITIES

1. Inspections and Right to Entry

The permittee shall allow the Division and/or the authorized representative, upon the presentation of credentials:

a. To enter upon the permittee's premises where a regulated facility or activity is located or in which any records are required to be kept under the terms and conditions of this permit;

b. At reasonable times to have access to and copy any records required to be kept under the terms and conditions of this permit and to inspect any monitoring equipment or monitoring method required in the permit; and

c. To enter upon the permittee's premises in a reasonable manner and at a reasonable time to inspect and/or investigate, any actual, suspected, or potential source of water pollution, or to ascertain compliance or non compliance with the Colorado Water Quality Control Act or any other applicable state or federal statute or regulation or any order promulgated by the Division. The investigation may include, but is not limited to, the following: sampling of any discharge and/or process waters, the taking of photographs, interviewing of any person having knowledge related to the discharge permit or alleged violation, access to any and all facilities or areas within the permittee's premises that may have any affect on the discharge, permit, or alleged violation. Such entry is also authorized for the purpose of inspecting and copying records required to be kept concerning any effluent source.

d. The permittee shall provide access to the Division to sample the discharge at a point after the final treatment process but prior to the discharge mixing with state waters upon presentation of proper credentials.

In the making of such inspections, investigations, and determinations, the Division, insofar as practicable, may designate as its authorized representatives any qualified personnel of the Department of Agriculture. The Division may also request assistance from any other state or local agency or institution.

2. **Duty to Provide Information**

The permittee shall furnish to the Division, within a reasonable time, any information which the Division may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Division, upon request, copies of records required to be kept by this permit.

3. **Transfer of Ownership or Control**

a. Except as provided in paragraph b. of this section, a permit may be transferred by a permittee only if the permit has been modified or revoked and reissued as provided in Section 6.9.8 of the Regulations for the State Discharge Permit System, to identify the new permittee and to incorporate such other requirements as may be necessary under the Federal Act.

b. A permit may be automatically transferred to a new permittee if:

(1) The current permittee notifies the Division in writing 30 days in advance of the proposed transfer date; and

(2) The notice includes a written agreement between the existing and new permittee(s) containing a specific date for transfer of permit responsibility, coverage and liability between them; and

(3) The Division does not notify the existing permittee and the proposed new permittee of its intent to modify, or revoke and reissue the permit.

(4) Fee requirements of the Regulations for the State Discharge Permit System, Section 6.16.0 have been met.

4. **Availability of Reports**

Except for data determined to be confidential under Section 308 of the Federal Clean Water Act and Regulations for the State Discharge Permit System 5 CCR 1002-2, 6.6.4, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Division and the Environmental Protection Agency.

The name and address of the permit applicant(s) and permittee(s), permit applications, permits and effluent data shall not be considered confidential. Knowingly making false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the Federal Clean Water Act, and Section 25-8-610 C.R.S.

5. **Modification, Suspension, Revocation, or Termination of Permits By the Division**

The filing of a request by the permittee for a permit modification, revocation and reissuance,termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

a. A permit may be modified, suspended, or terminated in whole or in part during its term for reasons determined by the Division including, but not limited to, the following:

(1) Violation of any terms or conditions of the permit;

(2) Obtaining a permit by misrepresentation or failing to disclose any fact which is material to the granting or denial of a permit or to the establishment of terms or conditions of the permit; or

(3) Materially false or inaccurate statements or information in the permit application or the permit.

(4) A determination that the permitted activity endangers human health or the classified or existing uses of state waters and can only be regulated to acceptable levels by permit modifications or termination.

b. A permit may be modified in whole or in part for the following causes, provided that such modification complies with the provisions of Section 6.11.0 of the Regulations for the State Discharge Permit System:

(1) There are material and substantial alterations or additions to the permitted facility or activity which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit.

(2) The Division has received new information which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of different permit conditions at the time of issuance. For permits issued to new sources or new dischargers, this cause includes information derived from effluent testing required under Section 6.5.7(5) of the Regulations for the State Discharge Permit System. This provision allows a modification of the permit to include conditions that are less stringent than the existing permit only to the extent allowed under Section 6.11.0 of the Regulations for the State Discharge Permit System.

(3) The standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued. Permits may be modified during their terms for this cause only as follows:

(a) The permit condition requested to be modified was based on a promulgated effluent limitation guideline, EPA approved water quality standard, or an effluent limitation set forth in 5 CCR 1002-3, § 10.1.0 et seq.; and

(b) EPA has revised, withdrawn, or modified that portion of the regulation or effluent limitation guideline on which the permit condition was based, or has approved a Commission action with respect to the water quality standard or effluent limitation on which the permit condition was based; and

(c) The permittee requests modification after the notice of final action by which the EPA effluent limitation guideline, water quality standard, or effluent limitation is revised, withdrawn, or modified; or

(d) For judicial decisions, a court of competent jurisdiction has remanded and stayed EPA promulgated regulations or effluent limitation guidelines, if the remand and stay concern that portion of the regulations or guidelines on which the permit condition was based and a request is filed by the permittee in accordance with this Regulation, within ninety (90) days of judicial remand.

(4) The Division determines that good cause exists to modify a permit condition because of events over which the permittee has no control and for which there is no reasonable available remedy.

(5) The permittee has received a variance.

(6) When required to incorporate applicable toxic effluent limitation or standards adopted pursuant to § 307(a) of the Federal act.

(7) When required by the reopener conditions in the permit.

(8) As necessary under 40 C.F.R. 403.8(e), to include a compliance schedule for the development of a pretreatment program.

(9) When the level of discharge of any pollutant which is not limited in the permit exceeds the level which can be achieved by the technology-based treatment requirements appropriate to the permittee under Section 6.9.2(1) of the Regulations for the State Discharge Permit System.

(10) To establish a pollutant notification level required in Section 6.9.5 of the Regulations for the State Discharge Permit System.

(11) To correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions, to the extent allowed in Section 6.11.0 of the Regulations for the State Discharge Permit System.

(12) When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

(13) For any other cause provided in Section 6.11.0 of the Regulations for the State Discharge Permit System.

c. At the request of a permittee, the Division may modify or terminate a permit and issue a new permit if the following conditions are met:

(1) The Regional Administrator has been notified of the proposed modification or termination and does not object in writing within thirty (30) days of receipt of notification,

(2) The Division finds that the permittee has shown reasonable grounds consistent with the Federal and State statutes and regulations for such modifications or termination;

(3) Requirements of Section 6.16.0 of the Regulations for the State Discharge Permit System have been met, and

(4) Requirements of public notice have been met.

d. Permit modification (except for minor modifications), termination or revocation and reissuance actions shall be subject to the requirements of Sections 6.6.2, 6.6.3, 6.7.0, 6.8.0 and 6.16.0 of the Regulations for the State Discharge Permit System. The Division shall act on a permit modification request, other than minor modifications requests, within 180 days of receipt thereof. Except for minor modifications, the terms of the existing permit govern and are enforceable until the newly issued permit is formally modified or revoked and reissued following public notice.

e. Upon consent by the permittee, the Division may make minor permit modifications without following the requirements of Sections 6.6.2, 6.6.3, 6.8.0, and 6.16.0 of the Regulations for the State Discharge Permit System. Minor modifications to permits are limited to:

(1) Correcting typographical errors; or

(2) Increasing the frequency of monitoring or reporting by the permittee; or

(3) Changing an interim date in a schedule of compliance, provided the new date of compliance is not more than 120 days after the date specific in the existing permit and does not interfere with attainment of the final compliance date requirement; or

(4) Allowing for a transfer in ownership or operational control of a facility where the Division determines that no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees has been submitted to the Division; or

(5) Changing the construction schedule for a discharger which is a new source, but no such change shall affect a discharger's obligation to have all pollution control equipment installed and in operation prior to discharge; or

(6) Deleting a point source outfall when the discharge from that outfall is terminated and does not result in discharge of pollutants from other outfalls except in accordance with permit limits.

f. When a permit is modified, only the conditions subject to modification are reopened. If a permit is revoked and reissued, the entire permit is reopened and subject to revision and the permit is reissued for a new term.

g. The filing of a request by the permittee for a permit modification, revocation and reissuance or termination does not stay any permit condition.

h. All permit modifications and reissuances are subject to the antibacksliding provisions set forth in 6.11.0 (5) through (9).

6. **Oil and Hazardous Substance Liability**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject to under Section 311 (Oil and Hazardous Substance Liability) of the Clean Water Act.

7. **State Laws**

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority granted by Section 510 of the Clean Water Act.

8. **Permit Violations**

Failure to comply with any terms and/or conditions of this permit shall be a violation of this permit. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit.

9. **Property Rights**

The issuance of this permit does not convey any property or water rights in either real or personal property, or stream flows, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

10. **Severability**

The provisions of this permit are severable. If any provisions of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances and the application of the remainder of this permit shall not be affected.

11. **Renewal Application**

If the permittee desires to continue to discharge, a permit renewal application shall be submitted at least one hundred eighty (180) days before this permit expires. If the permittee anticipates there will be no discharge after the expiration date of this permit, the Division should be promptly notified so that it can terminate the permit in accordance with Part II.B.5.

12. **Confidentiality**

Any information relating to any secret process, method of manufacture or production, or sales or marketing data which has been declared confidential by the permittee, and which may be acquired, ascertained, or discovered, whether in any sampling investigation, emergency investigation, or otherwise, shall not be publicly disclosed by any member, officer, or employee of the Commission or the Division, but shall be kept confidential. Any person seeking to invoke the protection of this Subsection (12) shall bear the burden of proving its applicability. This section shall never be interpreted as preventing full disclosure of effluent data.

13. **Fees**

The permittee is required to submit payment of an annual fee as set forth in the 1983 amendments to the Water Quality Control Act. Section 25-8-502 (1) (b), and State Discharge Permit Regulations 5 CCR 1002-2, Section 6.16.0 as amended. Failure to submit the required fee when due and payable is a violation of the permit and will result in enforcement action pursuant to Section 25-8-601 et. seq., C.R.S. 1973 as amended.

14. Duration of Permit

The duration of a permit shall be for a fixed term and shall not exceed five (5) years. Filing of a timely and complete application shall cause the expired permit to continue in force to the effective date of the new permit. The permit's duration may be extended only through administrative extensions and not through interim modifications.

15. Section 307 Toxics

If a toxic effluent standard or prohibition, including any applicable schedule of compliance specified, is established by regulation pursuant to Section 307 of the Federal Act for a toxic pollutant which is present in the permittee's discharge and such standard or prohibition is more stringent than any limitation upon such pollutant in the discharge permit, the Division shall institute proceedings to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition.

16. Antibacksliding

a. A permit may not be renewed, reissued, or modified to contain effluent limitations adopted pursuant to Section 25-8-503(1)(b) (BPJ) of the Water Quality Control Act, which are less stringent than the comparable effluent limitations or standards in the previous permit, unless any one of the following exceptions is met and the conditions of paragraph (c) of this section are met:

(1) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of less stringent effluent limitations; or

(2) Information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation or standard at the time of permit issuance; or

(3) The Division determines that technical mistakes or mistaken interpretations of law were made in issuing the permit, which justified relaxation of the effluent limitations or standards; or

(4) A less stringent effluent limitation or standard is necessary because of events over which the permittee has no control and for which there is not reasonable available remedy; or

(5) The permittee has received a permit variance; or

(6) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case, the limitations in the renewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

b. A permit may not be renewed, reissued, or modified to contain effluent limitations adopted pursuant to 6.9.2(2) or (3) of the Regulations for the State Discharge Permit System that are less stringent than the comparable effluent limitations in the previous permit, unless any of the exceptions provided herein is met and the conditions of paragraph (c) of this section are met.

(1) In waters where the applicable water quality standard has not yet been attained, effluent limitations based on a total maximum daily load or other waste load allocation may be revised to be less stringent if the cumulative effect of all such revisions assures attainment of such water quality standard, or the designated use which is not being attained is removed in accordance with Section 3.1.6 of the Basic Standards.

(2) In waters where the applicable water quality standard has been attained, effluent limitations based on a total maximum daily load, other waste load allocation, or any other permitting standard (including any water quality standard) may be revised to be less stringent if such revision is subject to and consistent with the antidegradation provisions of Section 3.1.8 of the Basic Standards. Consistency with Section 3.1.8 shall be presumed if the waters in question have been designated by the Commission as "use protected"; or

(3) Whether or not the applicable water quality standard has been attained:

(a) Material and substantial alterations or additions to the permitted facility occurred after permit issuance which justified the application of less stringent effluent limitations; or

(b) A less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is not reasonable available remedy; or

(c) The permittee has received a permit variance; or

(d) The permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case, the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

c. In no event may a permit with respect to which paragraphs (a) and (b) of this section apply be renewed, reissued, or modified to contain an effluent limitation or standard which is less stringent than required by federal effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into state waters be renewed, reissued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of an applicable water quality standard.

17. <u>Effect of Permit Issuance</u>

a. The issuance of a permit does not convey any property rights or any exclusive privilege.

b. The issuance of a permit does not authorize any injury to person or property or any invasion of personal rights, nor does it authorize the infringement of federal, state, or local laws or regulations.

c. Except for any toxic effluent standard or prohibition imposed under Section 307 of the Federal act or any standard for sewage sludge use or disposal under Section 405(d) of the Federal act, compliance with a permit during its term constitutes compliance, for purposes of enforcement, with Sections 301, 302, 306, 318, 403, and 405(a) and (b) of the Federal act. However, a permit may be modified, revoked and reissued, or terminated during its term for cause as set forth in Section 6.9.8 of the Regulations for the State Discharge Permit System.

d. Compliance with a permit condition which implements a particular standard for sewage sludge use or disposal shall be an affirmative defense in any enforcement action brought for a violation of that standard for sewage sludge use or disposal.